

U.S.I. JOURNAL

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Trans-Himalayan Campaigns of
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JANUARY-MARCH 1964

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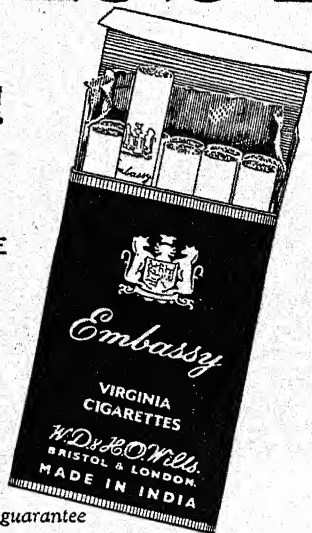
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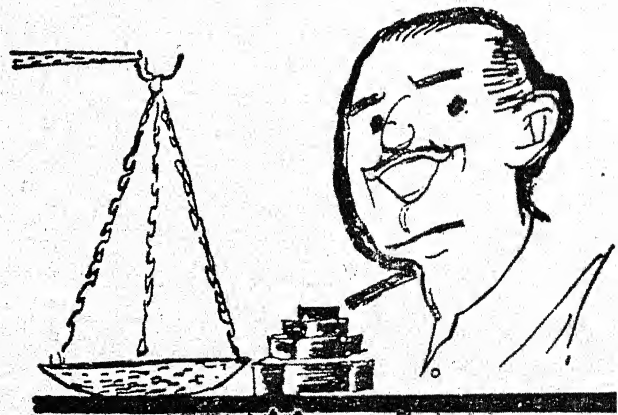
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HONOURING THE HEROES

Award of the highest gallantry medal in the country, the Param Vir Chakra, was made to the three Army personnel by the President, Dr. S. Radhakrishnan, on the Republic Day January 26, 1964.

The photograph shows the President giving the medal and scroll to the wife of the late Major Shaitan Singh, who was given this award posthumously. Major Shaitan Singh was killed, with 109 of his men fighting to "the last round, and the last man", at Rezang La, Ladakh, November 18, 1962.

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EDITORIAL

PLANNING FOR DEFENCE

“OUR thinking about the defence preparedness,” declared Shri Y.B. Chavan, the Union Defence Minister while replying to the debate on Defence Demands in the Parliament, “has entered a second phase.” The Defence Minister recalled that, about this time last year, the big question was what the Chinese might do after the snows melted in the Himalayas. The immediate needs, by way of making good the shortcomings of arms and equipment and shortages of officers, etc., had to be met. Towards this end, about 10,000 officers and nearly three lakh other ranks were recruited. The ordnance factories increased their quantitative output by nearly 80 to 100 per cent. Military aid from abroad was solicited, received and absorbed. The planning was, by and large, concerned with the immediate or near future.

Today, the situation has become a little more complex and, at the same time, made itself very clear. Besides posing the military threat, China also aims to disrupt our economic progress. Therefore, while our defence effort is based on meeting the military threat, our strategy must be to ensure that not only our economic development is not disrupted, but also that it goes ahead with the same speed that we have in our mind today—because, a developing economy would certainly add some new points of strain even for direct defence preparedness. Then, arising out of the Sino-Pakistan collusion, our entire northern border, including the international frontier with West and East Pakistan, has become live and we have got our Army and defence preparedness committed everywhere.

While planning for defence, all these factors have to be taken into consideration. And when the problem becomes a long-term one, we have to prepare ourselves for continuous and progressive defence effort, and to attaining preparedness in gradual phases, and to assigning priorities to regulate our effort according to our needs and capacity. So, our thinking had entered a second phase, in which we are looking ahead five years.

That planning pays dividends is a truism needing no elucidation. Already, fruits of planning were visible. An essential step in planning is standardisation, and the Army has standardised all the weapons and much of the communication

equipment it would be using in the next seven to ten years. All small arms will be of 7.62 mm. calibre, simplifying the supply of ammunition. The standardisation programme forms part of the process of modernisation of the Army, and covers all Army equipment and stores. Again, in the matter of vehicles, the planners have laid down a new programme which will ensure that, through a systematic exploitation of ordnance and civil industry capacity, within a reasonable period, the Defence Services would have a transport fleet with vehicles which are reliable and operationally dependable at any point of time. Similarly, for the Air Force, the planners have laid down priorities with due regard to its role to give support to ground forces, to intercept and attack enemy aircraft, to provide for movement of troops and cater to logistical requirements and to provide communications.

Long-term planning for defence, which has commenced in this country under the pressure of compelling circumstances, is, thus, a step in the right direction. Defence preparedness, to be at all effective, has to be on a planned basis. But, for us today, it is of the essence. We have to counter a wily enemy who has time on his side, who has been preparing to commit aggression upon us for the past twelve years and is planning for a very long period ahead. China's present strategy seems to be the classic one of building up a series of satellites around her borders, a strategy that would not countenance the presence of a huge land-power like India on her frontiers—hence, the effort to militarily humiliate her and to cripple our economy, merely two of the many ways in which we are threatened by China today. Indeed, the Chinese threat to us is total, constituting a menace not to our military and territorial integrity, our international stature and our internal harmony, or our economy alone; our very survival as a nation is threatened. The meaning of the term 'total war', itself, has been given a new dimension by the Chinese rulers. Therefore, India today must widen her concept of defence strategy and integrate it absolutely with national policy.

Defence planning is also essential because, in future, the defence and economic planning must be geared together. There are many areas of the country's economy which are essential both for rapid development and for meeting long term defence requirements, such as basic and heavy industries, transport and communication, trained manpower. With this in view, it would not be enough any more for the Planning Commission to merely consult the Defence authorities where it felt it was necessary to do so. A much greater coordination is called for. The Planning Commission must integrate defence requirements into their basic approach to planning. It may perhaps be useful for the Commission to have a permanent Defence cell which is readily available to the planners at all times.

Therefore, it is to be hoped that the present five-year defence plan is a forerunner of many more years of planned preparedness and long-term defence planning. This is the only way to keep our defence set-up in trim and to serve our immediate, short-term and long-term strategic requirements with efficiency and certainty.

SERVICE INTEGRATION

BY LIEUT.-COLONEL M. R. P. VARMA

"A Chinese historian, asked at a recent international conference what he thought were the principal effects of the French Revolution (1792), replied that it was too early yet to say!"

INTRODUCTION

The pattern of a future war can never be foreseen with complete accuracy. If it could, Surprise would cease to be a Principle of War. At the best it can be seen "as through a glass darkly". There is no doubt, however, that, with the advent of nuclear weapons, including tactical nuclear weapons, if used in a future war, the effect will be more total and more destructive than ever before.

As an alternative to nuclear weapons, we are also faced with the prospect of mass attack comparable to the days of Chengis Khan. This we can hope to meet only by equally massive rapid mobilisation or a nuclear deterrent.

Whatever the form of future war, a victorious outcome will depend on the singleness of war purpose of the entire nation. This, of course, is equivalent to the Principles of War known as Selection and Maintenance of Aim and Concentration. The best examples of the way in which such a determined war purpose and strategy was followed are those of the British in their adversities during World War II as brought out in Churchill's *Memoirs* and of the Chinese Communists' triumph over the United States-supported Kuomintang.

This article is written in the spirit of War austerity. I have directed all efforts to the best possible end-result on a common national battle front in as few words as possible.

SEPARATE FIGHTING SERVICES

HISTORIANS and anthropologists have shown that the origin of societies lies in combination of man with man against a common outside enemy. From its starting point, armed bands were formed which are the genesis of modern field armies. Soon after, came the hollowing out of the tree trunk. Many centuries later, seapower extended the realm of militant societies, like the Vikings, and, later, the British, Spanish, French and Portuguese. Even then, one reads of Generals Commanding-at-sea. When man achieved the ability to weather the high seas, his sense of adventure led him to divide Armed Forces into separate armies and navies, each supreme on its own element and strictly resentful of intrusion into what each Service considered its own absolute sphere.

By the same elemental extension, the parturition of the Air Force was inevitable. Air Force histories of various nations show a diversity of approach,

however. The British Royal Flying Corps soon became the Royal Air Force and within the Royal Air Force there arose the super Bomber Command. During World War II, rival British Scientific factions fought a war of their own as to the effectiveness of conventional bombing. The protagonists of bombing prevailed but were proved wrong. Similarly Douhet's theories have been largely exploded. With the emergence of China, Mackinder's geopolitical theories dominate all considerations of world strategy at the present time.

The British, with mature and entrenched interests, were able to obtain excellent results with the RAF as a separate service. Has every young nation the ability to retain Cooperation as a Principle of War ? Most, perforce, have adopted Unity of Command.

In Germany, the Air Force was subordinated to the Wehrmacht with typical Teutonic thoroughness. The result was the dissipation of the German Air Force, especially trained pilots, and the total failure of German Air strategy.

The United States adopted both systems. There was, and is, a separate air arm and a Strategic Air Force. However, arising out of American national temperaments and the enormous production capacity of that country, various research projects were pursued by each Service, often uselessly or superfluously. The runaway result is that Russia placed the first man in outer space. The inter-Services bickering that followed, split the US Services but the manner in which that country has now rallied in the face of Russian competition is something to be admired and emulated.

When resources are large, there should be little to squabble over ; but what happens to a developing nation like our own ? Every one needs to own the air above them. Unless the ground forces are supported adequately at the right time and place, forward air fields will be over-run and the air situation will deteriorate. Of course this situation may be overcome when Vertical Take-off and Landing (VTOL) aircraft come into their own. We do not always encounter equal maturity of outlook. In the face of great danger, there are very few of us who can appreciate the other Services' points of view, assess the wider implication and convince the other Service as to the best course of action in furtherance of the overall plan.

THE PROBLEM OF CONTINUOUS INNOVATION

Even if peacetime selection for higher command be faulty, the Armed Forces can be relied upon to produce competent Generals, Admirals and Air Marshals in time of stress, as was apparent only last year.

Similarly a practical national strategy with sound battle tactics can be evolved. Modern communication and battle surveillance techniques make it difficult if not impossible for one "Napoleon" to outwit or out-manoeuvre the other.

The present-day "Napoleons" are to be sought in the technological field. Given equal generalship and a parity in war-preparedness, the marginal factor lies in continuous and rapid innovation, including mass production methods. Here lies the key to National Defence in modern war. Defence scientists and production experts must work side by side and hand in hand with Service experts.

The moment we enter upon a modern war waged by really modern weapons, we are struck and stricken by the staggering costs involved. A further problem arises out of the scientific complexity of modern weapons. It is vital to eliminate false competition and to bring to light each and every limitation discovered by any one Service when evolving and evaluating weapons and techniques. There must be unity of purpose and unity of action.

ORGANISATION FOR WAR

Higher direction and Control of War : In war and times of stress, there is always a tendency for the services, the man on horseback, to lead the country. The manner in which this may be done depends on the inherent political stability of the country and the political wisdom of the party in power. Since Kings ceased to be warriors, there was always a need for safeguards against the man on horseback. The greatest safeguard of all has been and always will be, the constant association of the fighting Services with national defence strategy. National Defence plannings, for any system other than a military hegemony, must be done by elected ministers. There must be civilian, political control over all National Defence matters, under the guidance of the Prime Minister. This body alone can decide national defence matters. During recent years, this had come to mean that civil servants all too often dictated defence matters or made major defence decisions ignoring or in ignorance of professional, Service views. Happily, this stage seems to be past.

Our topmost political structure is adequate for evolving a strategy and issuing directives to all three Services or a joint Force Commander.

It could be improved perhaps by the addition of an Ismay. Such an officer secretary to a War Cabinet should be junior lest he incur the displeasure of ambitious seniors. He must have a wider grasp of national defence and planning that is found in most Service officers.

Defence science and production: The next lower level of defence production requires rapid evolution. Although certain positive steps were taken in this field over the few years, there is an urgent requirement to associate the user, the scientist and the producer from the very first stages to the last of every project.

Similarly, there should be a central intelligence agency covering all aspects of this closed subject. All that may or should be said on this is that there are at present many agencies and too many loopholes.

The chestnut and the kernel : Of course, the chestnut of integration has always been the three fighting Services themselves. Even matured countries like the United Kingdom have so far failed to have one single Chestnut.

This is the main matter that has exercised Lord Mountbatten since he became Chief of the Defence Staff and it will exercise him until his present post expires in 1964.

There can be no doubt that all planning should be joint and the recent introduction of a joint planning committee "with teeth in it" fills a much needed requirement. Taking the sea, it is becoming more and more apparent that we should cut our losses and go in for a completely underwater fleet. There should be a few conventional submarines for initial training while putting aside the maximum possible into a national defence sea-chest for buying atomic submarines with polaris missiles in the future. Such a force would be highly specialised and therefore would justify itself as a separate Service.

The logistic support of this force should also be underwater. The few aircraft required for emergencies should be under Naval control as should be other aircraft for command and control purposes.

The mobility of modern armies is no longer limited by the range of artillery weapons. The traditional role of the Cavalry has been usurped by aircraft and battle surveillance devices. There remains no doubt, that the weapons of communication and surveillance, including aircraft, must be under the command and control of the highest land forces commander, i.e., part of the Army establishment.

For such time as manned aircraft can remain aloft, there must be strategic and tactical air forces under their own Service commanders. When such an air force may, of necessity, have to be used in support of ground forces in an operational emergency—i.e., to devastate a massive attack or break-through—the defence committee of the cabinet must specify this in their directives. Such air components should have an army deputy or COS (SASO). On occasions where armies are maintained largely by air—joint transport aircraft are becoming more and more economical—it is also suggested that, for Army logistics, there should be a Maintenance Command under an Air Vice-Marshal with an Army Service Corps General as his deputy.

The main efforts of our Air Force should henceforth be directed towards vertical take-off and landing aircraft (VTOL), missiles and the outer space. This may sound premature but the strength of air power has always lain in the association of experienced GD pilots with aircraft and, now, missiles and space-craft designers, operating in the closest liaison together on long-term projects.

Nevile Shute's semi-autobiographic novel *Slide Rule* should be in the

curriculum of every Air Force pilot, aeronautical designer and aeronautical scientist.

CONCLUSION AND RECOMMENDATIONS

The threat now facing us could not be greater. When we overcome it we shall have won a real freedom; something greater than mere independence.

We are converting to a war economy. We are mobilising all our existing technical resources and every freedom-loving nation in the world is doing all it can to help us. Our existing outlook and defence structure is fissiparous and immature in some respects. If we are not to go under, we must employ empirical methods and be more pragmatic. Our Army, Navy and Air Force each have excellent traditions which are battle-winning factors not to be abandoned out of consideration of total integration. We have seen in the case of Germany that the idea of total integration is mechanical and rigid when applied to the three separate fighting services. We have also seen that, at National Defence level, total integration of service minds and purposes is a prerequisite for victory. Unless re-organised, our three separate Services houses stand in danger of being separately demolished on the battle field. Let us close down those wings of those houses that no longer justify themselves and build ourselves a new central house to further National Defence purposes.

"Men will not receive the truth from their enemies and it is very seldom offered to them by their friends."

—de TOCQUEVILLE

ONE POINT—TWO SIDES

BY LIEUT.-COLONEL R. D. PALSOKAR, M.C.

INTRODUCTION

The Chinese attacked simultaneously in three sectors, viz., Ladakh, central N.E.F.A. and Walong, and kept the nation guessing regarding their aim, immediate objectives and the reason for launching attack in three places so far removed. As it happened, the attack in the central N.E.F.A. sector was the main one and succeeded in pushing back our troops. The attacks in the other two sectors were successfully held up.

What the Chinese did in the overall plan was in accordance with their tactical doctrine which lays down that an attacking force should, after careful reconnaissance, evaluation and planning, attack in overwhelming superiority at one point and simultaneously launch small-scale attacks at two or more places. This is briefly described in one catch phrase, 'One point—two sides'. If one of the sides is deliberately left open, the possibilities are that the defender may lose heart and withdraw from this open side. Once the defender is dislodged from his prepared defensive position, to destroy him while on the run, with overwhelming superior forces moving with speed and employing these tactics, is comparatively easier. If the main assault and side attacks are launched after enveloping the defending forces, their total destruction may be achieved. Simultaneous cutting of the lines of communication is advocated as part of the general tactics.

It is proposed to examine this tactical technique with a view to determine its efficacy with particular reference to fighting in the mountains and to consider how best to counteract it.

RELATIONSHIP WITH THE PRINCIPLES OF WAR

CONCENTRATION of force: It is essential, according to '*Conduct of War*', to concentrate forces superior to that of the enemy at the decisive time and place. They should be so dispersed as to be able to unite to deliver the decisive blow. The Chinese technique is also based upon the same principle except that the superiority, as we know it, is not thought much of by them. They bring in overwhelming forces 10 to 15 times as strong if necessary. Though the aim in a tactical battle may be achieved it may be considered that such overwhelming superiority at every stage is against 'Economy of effort' and may have a decisive effect on the overall campaign or on the strategic conduct of the war. In spite of their vastly superior manpower, the Chinese cannot bring in such vast numbers at every place. The strain on the administrative services will also become unbearable.

Flexibility: This principle demands that the pre-arranged plans should be capable of alterations to meet changing situations and unexpected developments. When the forces mounting side attacks are far removed from the main force as they will be against larger objectives and bearing in mind the difficulties of wireless or any other communication in the Himalayan terrain, it is debatable whether plans envisaging such simultaneous attacks will be flexible. They will be rigid—and therein lies their weakness.

EFFECT ON ISOLATED DEFENDED LOCALITIES

If an infantry company is occupying an isolated defended locality it will not be difficult for the enemy to bring against it a force say ten to fifteen times as strong in mountainous terrain. Assuming that the company is well dug in, the locality mined and wired, it will be easier for the enemy to mount a successful attack with overwhelming numbers at one point with simultaneous attacks at two or more points. The mountains can hide the approach march of this force and its concentration. Considering the small perimeter of the locality, the envelopment and simultaneous attacks are within the bounds of planning and successful execution.

EFFECT ON DEFENDED AREAS AND SECTORS

An attack with similar overwhelming superiority against an independent battalion defended area would require ten or more infantry battalions—a division strength—to concentrate against it. Carrying the argument further, the enemy would have to bring three division strength against a brigade and so on. This is worked out on the assumption that overwhelming superiority means a superiority in the region of ten to one as against the normal three or four to one. Even if the figure of ten is considered excessive, and it is felt that it should be taken as seven or eight, it means that the enemy should bring seven or eight divisions to destroy one division defended sector.

The larger the force, therefore, occupying a defended sector, the more difficult it will be for the enemy to concentrate overwhelming superior forces in stealth against it. It will also be more difficult to launch simultaneous attacks on two or more sides in addition to the main effort at one place. Co-ordination of such attacks, due to frontages involved, the nature of the terrain, and difficulties of communication, will be a problem. Assuming that the enemy surmounts these difficulties, the defending sector commander will be able to determine which of the attacks is the main one and which ones the side attacks. He will, therefore, be able to take corrective action, launch his counter-attack and restore the situation.

INFLUENCE OF TERRAIN ON DEFENCE AND ATTACK

Mountains, particularly high precipitous mountains, do not always conform to the requirements of a commander who would like to deploy his division say

two up with just sufficient gaps between his brigades which his artillery and other heavy weapons can cover. Whilst he can do so in most places in the plains, he has to tailor his deployment to the size of the mountains peaks, their relative positions on the main avenue of approach and their ability to take troops. A hill, range or pass on the main approach may be good enough to take a battalion and no more. There may just not exist suitable deployment areas for the rest of the brigade or division.

If the previous argument that it is more difficult to destroy larger sectors is accepted, it follows that the defending commander must choose such ground which will accommodate the bulk of his force. Any compromise on this may lead to defeat in detail.

It may be mentioned here that if a position cannot take large number of troops to defend it, it cannot take a large number deployed to attack it either. If the deployment space is restricted for the defender, it is much more so for the attacker. The disadvantages to the attacker are definitely more. The Chinese try to get over this by infiltrating at night into the gaps between localities and appearing *en masse* in front of them.

INFILTRATION INTO DEFENDED AREAS AND SECTORS

In organising defensive layout, we accept gaps in a defended sector. These are between defended areas and are covered by artillery, mortar, medium machine-gun fire, obstacles and patrols. Similarly, gaps within a defended area are those between the defended localities and are covered by the direct fire of battalion anti-tank and automatic weapons. There are no such gaps advocated in a locality. It is quite often argued that larger gaps should be kept between the defended areas and sectors to cover a greater frontage and give greater depth to the defences. The argument is based upon the longer range of modern direct-firing automatic weapons, the greater accuracy and lethal effect of the mortar bomb and the gun shell.

Further, according to our teaching, penetration by the enemy within a defended locality is not accepted. Penetration between the defended localities or areas, *i.e.*, through the gaps is accepted. If anything, the enemy entering through such gaps and heading towards the killing ground is considered to be trapped and open to complete destruction. This killing ground is well inside the sector.

Against such a defensive layout and the theory of defence, the Chinese tactics of 'One point—two sides' may be considered. If the defending forces are a division strength the attacker has to reach places which are far removed. He can do so either by forced marches at night over long, circuitous routes or by infiltrating through gaps within the areas or sectors.

The defending commander can send out ambush parties at nodal points to disrupt enemy movements. The prerequisites of such ambush parties will be that they are strong in automatic fire but weak in numbers. At night, few men, well sited in the mountains, can hold up a force many times their strength for the best part of the night.

As for the enemy trying to infiltrate in small parties through the gaps, the deterrents as mentioned above may not be adequate. The gaps are within the defensive layout itself. It is not possible to keep them covered by fire all the time. Patrols at night may be overpowered in which case the enemy will have effected penetration at comparatively less cost. Thus, by keeping such gaps we help the enemy to concentrate troops behind localities or behind defended areas where they are least expected.

The obvious answer to infiltration at night through the gaps is not to encourage maintaining such gaps as a matter of routine between localities in a defended area, between areas and sectors. If penetration is not mentally acceptable in a defended locality and if there are no gaps for the enemy to come through, why accept penetration in a defended area and for that matter in a sector? The defences will become far more compact and as discussed earlier mountains do lack adequate space for deployment.

It may be argued that penetration is inevitable and gaps help to slow down the momentum of enemy's attack. What does help is the stout defence put up by defended posts and localities; not the gaps.

If the above is accepted, the definition of killing ground will have to be amended. Killing ground will then be that ground which is in front of the defended posts. There will be no separate killing ground for the sector.

In the plains, an attacking force may be able to find an alternate line of communication by a wide outflanking move. It is not so easy in the mountains where the attacker must fall back to the main artery of communication within a reasonable period or else he is liable to be defeated for lack of administrative cover. The reduction of frontage of the defending forces does not thus help the enemy in any way.

There also exists a need for headquarters to get into one of the defended areas for its protection. A large number of personnel are required to assist the commander to control the battle and to exercise his command. These persons do not and cannot devote sufficient time to look after themselves and have to be protected. This does not, of course, absolve them from their own protection.

CONCLUSION

The Chinese technique of attack 'One point—two sides' is rigid and wasteful in effort. Though it may bring success to a commander in a tactical battle, it will cause his defeat in the overall effort.

To fight it effectively, it is essential that divisions and brigades fight as such and not break up further into smaller forces. To prevent infiltration gaps between defended localities, areas and sectors should be discouraged and penetration should not be accepted as a matter of teaching even in a sector. The definition of killing ground should be suitably amended. Headquarters should move into defended areas for own protection. Greater stress should be laid on sending out larger number of small ambush parties which are strong in automatic fire.

"In general, the shifting of forces should be done secretly and swiftly. Ingenious devices such as making a noise in the east while attacking in the west, appearing now in the south and now in the north, hit-and-run and night action should be constantly employed to mislead, entice and confuse the enemy."

—MAO TSE-TUNG

GETTING USED TO HEIGHTS

BY BRIGADIER GYAN SINGH

".....to climb steep hills
requires a slow pace at first."

—*Shakespeare*

INDIAN mythology and literature are full of legends about the great Himalayas. These awe-inspiring mountains have been described as the centre of the world, the abode of the gods and the worshipful source of life. Even those in whom mountains do not evoke a sense of awe and worship readily accept that these towering sentinels shield the Indian sub-continent from fierce winds from the frozen arctic regions. If there were no Himalayas most of this country might have been a desert waste. But the sacred Ganga, the Yamuna and many other great rivers which are fed from Himalayas' perpetual snow-fields nourish the vast Indian plains. It is not surprising, therefore, that for centuries millions of Indians have revered and worshipped the Himalayas.

Since the dawn of civilisation, their lofty peaks formed the holy place of worship of the rishis and sages who sought refuge in their blessed solitude to meditate on the Divine. The less spiritually-minded paid regular visits to the hills in search of salvation at places of pilgrimage like Amarnath, Kailash, Hemkund, and Badrinath to mention only a few.

With the descent of the Dark Ages in the mediaeval period of history, the sinews of culture and civilisation began to dry up in India, same as elsewhere in the world. And, as with other values of life, the spirit of adventure and love of mountains seems to have received a sudden set-back. The bards sang no more of the glory of mountains, the rishis went no more to their sacred folds in quest of bliss. Instead, exaggerated stories of the difficulties involved in negotiating the high mountains have given rise to many popular misconceptions of today regarding their inaccessibility. There have also been numerous superstitious stories about some of the high passes being haunted by evil spirits or infested by poisonous gases. This type of folklore had for a long time lulled the people of this country into a complacent belief that the Himalayas formed virtually an impregnable barrier to human movement and, therefore, ensured security against external aggression. There was no logical reason for such an impression because, from time immemorial man had traversed the Himalayas for small-scale trade, religious missions and similar pursuits. On the other hand Zorawar Singh's military adventure in Ladakh and Young-husband's expedition into Tibet are examples of much larger bodies of men successfully braving the hazards of heights.

EARLY FEARS

Earlier travellers learnt to traverse the mountains or live in them the hard way. They must have found that some men suffered from unfamiliar maladies at high altitudes but they did not know that at those heights rarefied air plays strange tricks on the human mind and body. Nor did they understand the reasons why most of the mysterious troubles disappeared after these pioneers had lived at heights for some time.

Recent events have already shattered the age-old myth regarding the impassability of the Himalayas and their inhospitability. In a very short span of time thousands of men have learnt to live all the year round in high Himalayan camps. Men from all parts of India, the sea-coast and the tropical South, plains and the deserts, the foothills and the hilly regions are fast learning to climb, live and, when necessary, fight in the mountains.

Medical science is still trying to probe into the mysteries of exact physiological changes that take place in the human body when it is placed at unaccustomed heights for prolonged periods. However, judging from the experience of the hill-dwellers and mountaineers, enough is known to confirm that the human frame possesses definite adaptability for heights. Physiologists who accompanied Sir Edmund Hillary's scientific expedition to Makalu in 1961 have stated that, given time, nearly every man can acclimatise to heights upto 18,000 to 19,000 feet.

When an average person climbs high rapidly his immediate experiences are headache, nausea, giddiness, vomiting, loss of appetite, insomnia, lethargy, lack of interest in the surroundings and sometimes impaired judgment. This is no doubt a formidable list of troubles, but, fortunately, except in very bad cases, not all of these symptoms appear at once in the same man. Some of these are felt by most people at heights above 12,500 feet. A strong man or an outstanding athlete could become a victim of high altitude sickness just as much as any one else. On arrival at the new height he may perhaps find a lean and thin or perhaps a comparatively much weaker man engaged in normal work unbothered by any manifestations of mountain sickness. Without realising that the 'little man' has been there longer, and therefore is adapted to local conditions, the 'strong man' may well start pitying himself and think, "Perhaps I am not made for the mountains!" He would realize how wrong he is if he knew why. It would be of interest to examine the cause of these troubles and also find out how the air we breathe helps in maintaining life.

TISSUE OXIDATION

Man must breathe air to live, and in the air, the life-giver is the one-fifth volume of oxygen which is vital for life. In fact no life is possible without oxygen. The action of oxygen, called "tissue oxidation," releases energy. This energy is used up for all body functions including muscular work. It also liberates heat for maintaining appropriate body temperature.

When living at lower altitudes—say, at sea level—we are used to breathing air at maximum pressure. At zero height, oxygen tension is sufficiently high not to require the functioning of all air sacs in the lungs. Under these conditions of abundance of oxygen the idle air sacs come into play only when the body is subjected to strenuous exertion and its requirements of oxygen shoot up suddenly. Thus, at sea level, the partial pressure of oxygen which is at its maximum easily saturates the blood with oxygen. This oxygen is then delivered through the blood stream to every part of the body.

As we climb higher we know—indeed we can feel it—that air is getting thinner or rarer. Oxygen continues to constitute one-fifth of even this thin air. As the atmospheric pressure is progressively reduced the partial pressure of oxygen is also proportionately reduced. This causes all body functions to suffer. A stage is reached when the climber cannot carry on efficiently. Headache, nausea and other symptoms appear and the man is uncomfortable, perhaps miserable. “Have I reached my limit?” he wonders. But this is only Nature’s blunt way of indicating to him that all is not well and for the time being he had better take it easy.

MENTAL EFFECTS

The initial effects of this so-called ‘oxygen lack’ on human behaviour can, to some extent, be likened to the influence of alcohol. On reaching high altitudes, initially different men behave differently. Some people become morose and their mental and sensory faculties become dull. Others become irritable, abusive and sometimes reckless. Some seem to get fixed ideas which may result in the performance of foolhardy and illjudged actions. A renowned mountaineer who was the leader of an expedition has written that while on high camps he often had the murderous temptation to cut the throats of his companions. According to him the main deterrent to this homicidal urge was the thought that when he returned home it would be difficult to explain the absence of his comrades to their friends and relations. The effects of high altitude on the human mind are not necessarily limited to depressing and morbid thoughts. Some people may get a feeling of elation and exhilaration making them very talkative or prone to emotional outbursts like hysterical laughing or crying.

Nature has provided man with a body mechanism which starts rehabilitating itself as soon as it is exposed to new environments. But the psychology of the man plays an important part in the smooth functioning of this mechanism. If he has the will to stick it out and he refuses to accept defeat by going to lower heights, Nature takes over and in a short time prepares his system to withstand the new conditions. To understand how Nature comes to man’s rescue we must know what happens inside the body and the processes of adaptation of the human system to its new environments.

NATURE'S HELP

As immediate aid to the system, Nature provides limited acclimatisation by two emergency measures. Firstly, as soon as the retardation of body functions is felt due to low oxygen tension, Nature compensates the system by making the man breathe faster. He finds himself panting. Thus more air is passed into the lungs which means that sufficient oxygen is made available for charging the blood. Secondly, the heart is ordered to pump faster; this lets more blood flow through the lungs for oxygenation. This increases the heart rate and the climber gets a feeling of palpitation. Heart, the vital organ of the body, loyally works to capacity to meet the situation.

Nature does not permit impairment of the vital body organs by overstraining them. So, as acclimatisation progresses, the body's faster breathing is converted into deeper breathing. Now the climber stops panting; he breathes more deeply and perhaps only slightly faster than normal. The strain on the breathing mechanism is eased. In due course, more air sacs open up on the lungs. These air sacs are lined with capillaries which are small blood vessels. With the increase in air sacs there is a proportionate increase in the available capillaries. Oxygen can thus diffuse from a larger number of newly commissioned air sacs through the capillaries into the blood stream. In other words the oxygen diffusion surface increases and more blood is saturated with oxygen.

To relieve the strain on the pumping mechanism of the heart Nature helps in yet another way in order to make more volume of blood available. In medical language this ingenious innovation is called 'Hypervolemia', which means that the volume of existing blood becomes larger and so does its capacity to take more oxygen.

OXYGEN CARRIERS

Basically blood consists of plasma, the white blood corpuscles and the red blood corpuscles (RBCs). RBCs are the carriers of oxygen. An analogy from every day life would help us to understand clearly the process of the delivery of oxygen to body cells. Let us consider oxygen as the loads the RBCs as the vehicles and the partial pressure of oxygen from the available air as the loaders. After being loaded with oxygen the carriers (RBCs) travel to the destination (the cells), through busy traffic channels provided by plasma which flows in the arteries and veins. The cells must get a minimum quantity of oxygen over a given period. Hence the necessity for compensatory processes in the body which start functioning in rarefied atmosphere.

When the body finds that the compensatory mechanisms of fast breathing, deep breathing, faster pumping by the heart and increase in the volume of blood cells is still inadequate to meet the situation, Nature comes out with her trump card. The marrow in the bones which is responsible for supplying the red blood

corpuscles is activated to throw up more RBCs in circulation (Polycythaemia). More carriers are now available to the transporting agency as the concentration of RBCs per millilitre of blood goes up.

Since an increase in RBCs is Nature's main method of meeting the situation, it would be worthwhile to study this process in greater detail.

At sea-level, blood holds the minimum number of RBCs. Here, an economy in the size of load carrier fleet (RBCs) is possible because the loaders represented by high partial pressure of oxygen, are strong and can load the vehicles to capacity. Thus, at sea-level, minimum available RBCs enter the blood stream fully charged with oxygen. Adequate quantity of oxygen is received at the destination to burn the food, release energy and repair wasted tissues.

After climbing high, when the tissues start feeling the want of oxygen, newly commissioned RBCs come into operation. Since the carriers have now been provided at a lavish scale it does not matter much if the loaders cannot load them to capacity. Thus, though not fully saturated, the greater number of partially-loaded RBCs are able to deliver adequate quantity of life-giving oxygen to the cells, and all is well. Life starts functioning as before and all symptoms disappear. Now the climber will be active, will eat well and sleep well, which are sure signs of good acclimatisation. The increased RBCs as well as other processes have more or less fully acclimatised the man for that height.

The final and finishing touches of acclimatisation come in the form of adaptation at the terminal cellular level where oxygen is actually used. Ultimate adaptation lies in the economic utilization of oxygen by the cells in the process of oxidation. At lower altitude, the cells are used to an abundant supply of oxygen. But, on gaining heights, they tighten their belts, as it were, and learn to function with full efficiency with reduced supply. Under this stress the vital function of the cells are restored to the full extent and maximum benefit is derived from the available oxygen.

It would be easy to understand, therefore, why physiologists and doctors do not favour administering oxygen artificially at heights up to 17,000 to 18,000 feet except in cases of illness. Giving oxygen artificially when the cells are beginning to do with less oxygen throws Nature's process of economy out of gear. It has been more or less conclusively established by eminent mountaineer physiologists like Doctor Pugh and Doctor Milledge that at heights upto 20,000 feet oxygen does not materially improve climbing performances. In fact it causes a definite set-back to the process of cellular adaptation and ultimate acclimatisation.

ACCLIMATISATION PROCESSES

The intricate human system goes through a number of minor contributory adjustments. But the main processes of acclimatisation to rarefied atmosphere

could be summed up as:

- (a) Increase in heart rate and rapid breathing.
- (b) Deeper but less rapid breathing.
- (c) Opening up of more air sacs in lungs.
- (d) Increase in pulmonary vascular diffusion surface making more capillary surface available for oxygen diffusion.
- (e) Increase in volume of blood.
- (f) Greater discharge of RBCs by bone marrow.
- (g) Economy in the use of oxygen by cells.

It has been observed by mountaineers and physiologists that most people can acclimatise themselves easily to stay for prolonged periods at heights up to 17,000 to 18,000 feet. But, as we have seen, proper acclimatisation entails a number of changes inside the human body. These take time and are best achieved if they are not unduly hastened. Nature does not like being rushed and "acclimatisation failure" results if we foolishly defy the laws of nature. We can help Nature to help us if we put our systems through deliberate and systematic training. That is why all mountaineering expeditions to high peaks have a period set aside for acclimatisation before the team ventures to climb high.

No two human beings are alike. Every man has his own pattern of reactions to given environmental conditions. Some people acclimatise quicker than others but in two to three weeks nearly every one is fully adapted to live at higher camps in the mountains. This period can be conveniently broken up in three stages of training.

STAGES OF ACCLIMATISATION

In the first stage depending on the suitability of the terrain the first training camp could be established at a height of about 9,000 feet. During a week's stay at this camp the party should go on practice climbs progressively increasing the height until every one feels comfortable up to heights of 12,000 to 13,000 feet. This period of training will also help in generally toughening up the climbing muscles. The climbers should also carry loads, again progressively increasing the weight, as they get accustomed to the exertion.

'Climb high and sleep low' is a good principle to observe during acclimatisation training but as the party gets fully adapted for a particular height a bivouac or a temporary camp at a higher site could be established to advantage.

If the training in the first stage has been carried out systematically nearly every one in the party should feel comfortable at heights upto 12,000 to 13,000 feet. For the next stage, the training camp should be established at about 11,000 feet. Here, again, the party should climb 2,000 to 3,000 feet higher by way of exercises

and excursions. After about a week nearly every one should be acclimatised enough to be able to climb up to the troublesome height of 12,500 feet and over.

In the final stage of acclimatisation training the camp should be set up at a height of 13,000 to 14,000 feet. Initially, effects of low atmospheric pressure generally start telling on one after a height of 12,500 feet is reached. Systematic acclimatisation in the first two stages should have prepared the body adequately for this height. A very small percentage may still suffer a little. But they should not lie in bed and nurse their troubles. Instead, they should keep themselves occupied in easy chores round the camp. They could try and identify important landmarks in the area on the map and on the ground. They could perhaps admire the beautiful landscape or the cloud effect, look at the wild life or birds in the region. In short they should take an interest in their surroundings, because all the time, inside their bodies, Nature is putting into operation the compensatory mechanism. Very soon these men would also feel as well as their comrades.

The party is now reasonably well acclimatised to go up to 15,000 to 16,000 feet. If they have to climb or live higher they should take it easy for 2 to 3 days after which their systems will get adjusted to still rarer air.

After acclimatisation when men return to lower altitudes, their systems are partially de-acclimatised. So they must re-acclimatise themselves on return to heights. However, mountaineers have found from experience that re-acclimatisation is easier and quicker. Thus during subsequent visits to higher altitudes the acclimatisation period can be shortened a great deal.

According to scientists, the human system can acclimatise up to 22,000 feet. In other words, the oxygen tension in the atmosphere and the human body's capacity to absorb oxygen is theoretically adequate upto that altitude. In practice it has been found that up to 18,000 feet or so there are no ill-effects of fairly prolonged stay in the mountains. Also, at this height, there is no need to artificially administer supplementary oxygen to a normal healthy man.

DETERIORATION ZONE

Physiologically, heights between 22,000 and 26,000 feet are considered as "deterioration zone". Prolonged stay in this zone is likely to waste out the body fast while altitudes beyond 26,000 feet are virtually in the 'death zone'. However, endurance records established by some of the recent mountaineering expeditions show that the human frame can be subjected to stresses and strains far beyond the accepted limits. For example, in the second Indian expedition to Mount Everest, the summit team of three stayed three days at their highest camp (27,650 feet). Before reaching this camp their bodies had already deteriorated to some extent because they had had to spend two nights at the South Col (25,850 feet) on their way up. Most of this period they were without oxygen which would have been an ordeal in itself. But the fact that during this period they made a daring attempt to

climb the peak and reached within 400 feet of it shows the extent to which determined men can stretch their limits of endurance.

Another climber and a Sherpa spent six nights at the South Col (25,850 feet), again most of the time without oxygen, and a 53-year old Sherpa Sirdar carried a full load up to 27,650 feet. The expedition's doctor spent 45 consecutive days at the advance Base Camp (21,200 feet). All these men have returned from the mountain without any apparent impairment to their health.

CONCLUSION

Man has ventured high through the ages. When he suffered at high altitudes he called it the influence of evil spirits or poisonous gases. When he got acclimatised and was able to brave the hazards of heights, he perhaps put it down to his personal prowess, for he did not know that all the time inside his body Nature was busy setting to work its compensatory mechanism. Now that men of science have turned their attention towards the study of high altitude physiology we have acquired a clearer understanding and a conclusive evidence of Nature's work in enabling the human body to adapt itself to physiological stresses and strains of high altitudes. In time of need Nature comes to the aid of the human body, but it does not like to be hurried or interfered with.

"It is our imagination that has become our limiting factor, not our means and not our resources."

—BARBARA WARD

A SOLDIER FIGHTS

—A matter of prestige

BY BRIGADIER N. B. GRANT

INTRODUCTION

Times of India (Jan. '63):—"Wanted a bridegroom for a very rich, beautiful, talented and highly educated young girl. The groom must have prestige and good social standing. Army officers need not apply."

There was a time when every young girl's heart used to flutter whenever she saw a soldier in uniform. Not very long ago, amongst the nobility, one member of the family invariably joined the colours, and the ambition of every young man of good family was to bear arms for his country. In those days to receive a commission in the army was one of the highest honours that could be bestowed on a man, and, once he received it, he was accepted in the highest of society and enjoyed the top privileges which that particular country could afford.

The whole picture now seems to have changed, specially since the end of World War II. The soldier is no longer placed on the same pedestal that he once was, and he has come down from his original social standing and prestige. The aim of this paper is to examine, how far has this affected the soldier's professional competency, namely, his willingness to fight. The principles enumerated in the paper apply generally to all the democratic armies of the world; for better understanding, however, certain examples quoted in the paper are naturally related to our own.

THE MENTAL MAKE UP OF A FIGHTER

SOCIETY, in all countries, has imbued the soldier with sterling qualities of character, such as patriotism, integrity, courage and self-sacrifice. In this respect, although some lapses of character may be accepted amongst civilians, they can never be forgiven in a soldier. The latter is expected to have a higher sense of duty and moral character than his civilian counterpart. This aspect, however, is difficult to understand from a purely psychological point of view. For, if two men are raised in the same environment, brought up in the same home and educated in the same institutions, generally they would normally be expected to have similar type of characteristics and mental make-up; yet, if one of them joined the army, he would automatically be expected to behave and act differently from the other who was a civilian. Nevertheless, if a soldier has to fight, and, in the process, he is willing to die, he must have these very same characteristics ingrained

in him. This can be achieved only if the reputation and prestige of the soldier is built up to make him feel morally superior to his civilian counterpart. Studies of wars have amply proved, that, ultimately, a soldier makes the supreme sacrifice, not because he is more courageous or more patriotic than his civilian fellow mate; he certainly does not do it for the army pay he receives; the only reason he dies without batting an eye-lid is, because he believes that he is a superior being and, as such, cannot let himself down in the eyes of the nation. The question, therefore, arises as to how this feeling of superiority must be inculcated in the soldier in peace-time, so that it becomes a part and parcel of his entire mental make-up and automatically manifests itself during a crisis in battle.

THE OFFICER'S SOCIAL STANDING

Not very long ago, there were only two categories of soldiers—the commissioned officer and the other ranks. The officer, whether a Second-Lieutenant or a General, enjoyed the highest privileges that his country could afford, and he was automatically accepted in the nation's topmost society without reservations. Irrespective of their ranks, socially, all officers were considered equal, and they maintained a standard of life for the rest of the nation to copy. Even in those days, an officer could not afford this standard only on his (then) army pay; however, the people made up for this by affording him privileges, like concessions in travelling, entertainment, membership of clubs, etc. In short, the nation saw to it that, at every stage, in the eyes of the people, the officer's dignity and prestige was maintained at the highest level at all times. Since then, the times have changed, and, instead of just one category of officer, we now have several in lieu, e.g., there is the airconditioned-class-travelling officer and the first-class-travelling officer, the desert-cooler officer and the ceiling-fan officer, the C.I.-type officer and D.I.-type officer, the first-class air travelling officer and the tourist-class air travelling officer.

In those days it was insisted upon, that the military officer had to travel by the topmost class, had to stay in the topmost hotel, and could only be allowed to occupy the topmost seats in cinemas and other places of entertainment. These things are now the privileges of business firms and industry, who insist in their officers maintaining the same high standard of living which once the military officer was expected to observe. In no other profession is the prestige and the feeling of superiority more important than in the fighting services. A good example of this psychology, taken from our own army, can be seen in the Gorkha soldier, who, man-to-man, is as brave and as tough as any other soldier, and, yet, who has earned a reputation of being one of the finest fighters in the world. How was this achieved? Simply by putting him on a very high pedestal of honour. For example, to begin with, he was called a GOR and not an IOR; he was also made to believe that he was so superior that he could only be led by a British officer. In time, he

actually came to believe in his superiority, and when the real test came, he lived up to the reputation in which he was held.

HONOUR AND PRESTIGE—WHAT IT IMPLIES

While the relative importance of different motives for a man joining the armed forces is difficult, if not impossible, to reconstruct, an official questionnaire study of about 8,000 graduates of West Point, U.S.A., concluded that "relative to compelling factors for entering West Point, almost all indicated that honour, prestige and traditions of the service was the most important reason." Whether one enters the military service because of a sense of mission or for career reasons, constant preoccupation with fighting engenders a distinctive self-conception. The fact that the soldier considers himself distinctive explains why, in a society in which the military is held in doubtful esteem, social inheritance of the profession—whether coerced or voluntary—takes place at all.

Military honour and prestige has always meant, firstly, that officers were gentlemen; secondly, that loyalty to the military commander was personal; thirdly, that officers were members of a cohesive brotherhood which claimed the right to extensive self-regulation; and, lastly, that officers fought for the preservation and enhancement of traditional glory. Each of these factors are discussed in the succeeding paragraphs.

Regarding the first factor, the military officer is considered a gentleman, not because the Parliament wills it, nor because it has been the custom of the people in the past to afford him that courtesy, but specifically because nothing less than a gentleman is truly suited for the particular set of responsibilities which the military officer is expected to execute. As long as members of the military hierarchy consider themselves to be special because they embody the martial spirit, it is indispensable that they also consider themselves gentlemen.

Regarding the second factor, the original concept of personal loyalty and allegiance, as a component of honour and prestige, has had to be changed to fit the growth of our democratic organisation. Our constitutional system, in order to ensure civil supremacy, requires that the soldier swear allegiance to support and defend the constitution. In this respect, the organic law has transformed allegiance to a person to allegiance to a formal office or position, one which is filled by a civilian, namely the President, who is also the Commander-in-Chief. This image of personalised allegiance helps to make military honour compatible with civil supremacy. In this respect, for external defence, the concept of submission to civil supremacy entails the latter authority deciding, who is the enemy, when war is to start, and the terms of peace. Within this sphere, the soldier has to decide how the above should be executed in furtherance to national policy. Increase in the size and functions of the military establishments has produced a

corresponding organisational revolution in the mechanics of civilian control. This has steadily increased since the last war, and both the legislative and executive branches of the Government have sought to strengthen the machinery of political control over the armed forces. This is as it should be, as a permanent military establishment, which consumes nearly one-third of the national budget, requires extensive political support, and in turn the machinery of civilian control is required to mobilize this support.

One of the means by which the legislative branch of the Government exercises civilian control is through control of military expenditure. In practice, however, the basic aim of this budgetary control appears to focus on elimination of waste, rather than on evaluation of military performance. In this respect, the procedure adopted by the Public Accounts Committee on Defence Appropriations, consists of a detailed legal-type, item-by-item review. One gets the impression that the Parliamentarians are generally suspicious of military budgets, and that representatives from the armed forces are generally interrogated on the presumption that they are on the defensive. In a democratic government, the professional soldier can thrive in this setting only if he has the strongest positive commitments to the system of civilian control. Fundamentally, this means that civilian supremacy is effective, because the professional soldier believes that his political superiors are dedicated men who are prepared to weigh his professional advice with great care. In this, the soldier needs to be assured that he will have effective access to the highest decision-making authority.

The third aspect of honour comprises a sense of brotherhood and intense group-loyalty. It will be seen that it is not primarily a cause which makes men loyal to each other, but the loyalty of men to each other which makes a cause. All professions and leadership groups require a sense of social solidarity, and the greater their solidarity, up to a point, the greater their effectiveness. In the military, however, this sense of fraternity is more than just instrumental, it is an end in and of itself, and, for this reason, it becomes suspect to the civilian outsider. The military officer lives with a select group and never has to worry about a man's word, because he is as good as his word, and which is generally not true of civilian business life. Military honour requires the officer to play the game without reservation, for, to do otherwise would be bad form.

The fourth factor, namely the belief that the officer Corps mirror the nation's credo, has served the needs of the internal administration of the military establishment. They have also come to believe, that in some respects they are superior to the bulk of the population. More secretly than publicly, they hold the self-conception of standard-bearers and conservators of great traditions in a changing social environment. One cannot be average and still fill such a role. The military establishment is a reflection of the civilian social structure. In this respect the popular demand for equality of treatment grows with the industrialisation of the

nation. As the standard of living rises, tolerances for the discomfort of military life decreases. Social relations, personal leadership, material benefits, ideological indoctrination, and the justice and meaningfulness of war aims are now all component parts of military morale.

THE NATION FIGHTS

In a free enterprise society, the military profession cannot compete with the private sector in monetary rewards for its members. In such a society, there is a widespread belief among military professionals that their standard of living has not been adequately maintained since the end of World War II. They seem to be beset by a sense of subjective deprivation, and feel that the material welfare of the rest of the society is somehow advancing more rapidly than is their own. The place of secondary importance to which democratic countries relegate military affairs in peace-time means, inevitably, that the best brains and the most enterprising and ambitious youngmen would not seek to make the profession of arms their career for life. They would rather go into business and the other rather well-rewarded professions. The effect of all this is that, when the crisis comes, they find themselves unprepared not only in the obvious way of lacking arms and equipment, but in the more fundamental ways of lacking trained talent and appropriate institutions.

Finally, it must be clearly understood that, ultimately, it is the nation that really fights, the soldier being only a symbol or the reflection of the fighting spirit of the nation. During World War II, it was not the French soldier who was responsible for the capitulation of France, but France surrendered because the nation refused to fight. On the other hand, the small islands across the Channel stuck it out, not because of its Spitfire planes, nor because of its Brigade of Guards or its naval might; Britain fought it out because the British nation refused to surrender.

CONCLUSION

In any form of government, the political control of the military profession ultimately hinges on the answer to the question, "why does a soldier fight." In a feudal society, the soldier fights because he feels that he is issuing the orders. Under totalitarian control, the soldier fights because he has no alternative. In a garrison state, the soldier fights for national survival and glory. It is only democracy, however, that ensures that soldiers can be effectively motivated by professional ethics alone, and that the soldier fights because of his career commitments. The soldier in a democratic state performs his duty which includes fighting, because he is a professional with a sense of self-esteem and moral worth. The civilian society must therefore, permit him to maintain his code of honour and prestige, and should be prepared to place him on a higher pedestal than the rest of the population. He is amenable to civilian political control because he recognises that the latter appreciates and understands his tasks and responsibilities. However, today,

honour and prestige, which were of a fundamental value to the pre-war military officer and which is still a most important dimension of self-image of the present officer, has been somewhat strained.

Military honour and prestige is both a means and an end. When the military prestige is effective, its coercive power is considerable, since it, and it alone points to the single over-riding answer to the question—why a soldier fights.

We hope to find in future issues of the "Times of India" the following insertion:

"Wanted a bridegroom for a very rich, beautiful, talented and highly educated young girl. The groom must have prestige and social standing. Army officers preferred."

NOTE: The author is grateful to the publishers of Mr. Morris Janowitz's book, *The Professional Soldier* for permission to use certain ideas and quote from it.

PROBLEMS AND TECHNIQUES OF AIR OP FLYING

BY LIEUT.-COLONEL E.K. HARIKRISHNA

INTRODUCTION

The air OP units of the Air force function as the eye of the Army. Their integration and employment in the overall operational plan is of vital importance to the army commanders in the field. To enable air OP to function efficiently, they have developed a highly specialised form of service flying to fit and co-relate the type of flying to their role. Without such correlation these specialised techniques of air OP have little value to its users, the Army.

AIM

THIS article highlights the flying techniques of a specialised Air Force unit and co-relates it to their role, bringing out their capabilities and limitations, so that the Army, the user service, may understand better the problems of a versatile unit such as the air OP.

ROLE

The role of air OP requires that it functions as an aerial observation post to bring information and location of the enemy for the immediate requirements of the Army commanders in the field. This it does at any time of the day or night as long as visibility permits. On gathering such information, the air OP officer, a gunner officer, can engage those targets with artillery fire if necessary, in the shortest possible time, with all types of artillery allotted to him. The air OP has also the capability to procure at the shortest possible notice intimate oblique photograph of the enemy terrain and locations.

AIR OP ASSETS

The role stated above (less photography) constitutes the basic requirement of any artillery OP officer. In this field, therefore, the air OP officer has no special advantages. His asset, however, is his greater mobility over a wider enemy front than a ground OP. To achieve this, he specialises in flying techniques which enable him to function in adverse conditions of weather and terrain and against enemy threat from ground or air.

The ability to carry out each of its roles in the minimum possible time constitutes the air OP's greatest asset. To gain the maximum advantage out of this asset, the air OP must be deployed in the forwardmost location within the army

formation area where an advanced landing ground (ALG) can be prepared. A major part of air OP flying is aimed to perfect the technique of getting in and out of the most marginal ALG under the most adverse conditions.

ADVANCED LANDING GROUND

Air OP ALG will be sited well forward in the Army formation area. Very often, ALGs are prepared from any piece of suitable level ground with little engineer effort. Often its surfaces would be just within the acceptable limits with dimensions that are severely restricted. Approaches to them may be difficult due to natural obstructions in the take-off and landing path. Situated normally near the gun area, the trajectory of artillery fire may impose further restrictions.

SPECIALISED FLYING

Every condition mentioned above constitutes a flying problem during the take-off and landing. Once airborne, the problem veers around the role in hand. This includes flying a light, unstable aircraft at restricted heights in difficult terrain and weather, map-spotting enemy locations, manipulating two different communication systems, observing and controlling artillery fire, keeping a look-out for enemy air and ground threat and maintaining a mental note of orientation for homing back to ALG with little navigational aids other than a compass. This the pilot does on his own as the sole occupant of his flimsy craft. No other service flying involves these problems. The techniques of air OP flying, therefore, are complex and difficult, needing constant and continuous training. These are highlighted further, under various headings, below.

Take-off techniques: The air OP ALG being marginal in quality, the take-off techniques consist of getting airborne in the shortest possible distance and gathering sufficient speed in the air to carry out further manoeuvres at safe flying speeds. On a hard surface, this calls for building up the maximum speed in the quickest possible time after which the aircraft is pulled off the ground, using the lift-producing devices available in the aircraft. If the surface is soft, the technique is to aim at applying the minimum pressure on the ground while the aircraft is gathering speed, so that the ground resistance is minimised on the wheels, to achieve the quickest lift-off speed. On an ALG restricted in width, coupled with a cross wind, the pilot is posed with the problem of keeping his aircraft on the ground along a narrow path resisting the wind-vaning effects of cross winds, to achieve the minimum lift-off speed in the shortest possible distance.

Once airborne, the next problem centres on gathering sufficient flying speed which gives the maximum lift in the shortest possible time. This assumes greater significance if natural or artificial obstacles (for instance trajectory of own artillery) obstruct the take-off path. This may require climbing away over obstacles at critical minimum flying speeds with maximum lift component. On the other hand, the pilot may be forced to take maximum-rate turns at low levels at very near the

stalling speed of the aircraft. These call for refined techniques and fine judgments of the ability of the aircraft at its lower speed ranges.

These requirements vary with each type of aircraft and within each type they differ with each individual aircraft. The knowledge of these characteristics and idiosyncrasies forms the bare thread on which the air OP pilot's safety depends. It may be added that these conditions are aggravated by the varying conditions of speed, direction and turbulence of wind at each ALG.

Circuit techniques: Normal circuit patterns are rarely flown by the air OP in operations. The location of the ALG will, more often than not, necessitate circuits from any direction, at various heights, coupled with turns and circuit patterns to suit the configuration of the ground surrounding the ALG. The ultimate aim of every circuit is to position the aircraft with a final steady descending approach into wind with landing speeds controlled critically above the stalling speed. These may involve very low level manoeuvres, low speed turns, flying close to obstacles and features under adverse weather conditions. The trajectory of the nearby artillery units may necessitate flying a circuit no bigger than a full-sized football field.

Flying techniques for the role: Flying on an air OP task, the pilot is the sole occupant of the aircraft. He is constantly engaged in manually flying a light, unstable aircraft, manoeuvring himself constantly in tight turns to be suitably positioned to observe, engage or photograph the enemy or his location. One part of his auditory senses are concentrated to transmit and receive over the army communication set which he constantly nurses and manipulates to obtain the best results. At the same time he listens over the Air Force communication channel for vital messages when enemy fighters penetrate our air defences. He is constantly on the look-out for the enemy fighters himself. All the same, his attention is mainly concentrated on his task. Keeping a mental record of orientation over the target area is vital and at the back of his mind is the constant worry of the navigational details required to get back to ALG where no homing aids exist even when weather closes unexpectedly.

To function in these circumstances the pilot is trained to achieve a standard requiring complete relaxed natural flying with his senses and reactions sharpened to the highest degree. He needs to be a natural part of the aircraft to twist and turn in accurate manoeuvres without reference to instruments, for his eyes cannot leave the target area for very long. No gain or loss of height is acceptable, for very often he is flying under own artillery trajectory which goes over him like a dangerous carpet of live shells. His fly-lane and flight height have been planned to avoid this danger. Engine handling must remain of a high standard, lest they are revved beyond their limits while his ears are crackling with the noise of gunner chat mingled with atmospherics.

Evasive action: Once in the air, the pilot is constantly on the look-out for any lone enemy fighter that may sneak in on him. This is the greatest threat against which he entirely depends on alertness, early warning over the Air Force communication link and extreme manoeuvrability of the aircraft and skill of the pilot for deck-level flying below tree-top heights, where no fighter plane dare approach. These call for the highest standard of accurate low-level flying where quick reaction under adverse conditions and awareness of his aircraft as a part of himself is of the utmost importance.

Night flying: Very often the pilots mission calls for observation of the enemy at dusk and dawn when re-deployment and reinforcements are most active on the enemy front. This necessitates landing or taking off at night from ALG. No ground force commander would permit the use of elaborate ground lighting system by the air OP for fear of giving away own location to lurking enemy patrols. The air OP depends on two hurricane lamps positioned at either ends of the ALG to indicate the take-off run. For landing, two jeep lights are focused on the touch down point which are switched off as soon as the wheels touch the earth. Homing devices are always rudimentary. Under these circumstances night flying standards have to be very high indeed.

Concealed flying: At times, a forward ALG may be partially visible from an enemy vantage point. The air OP then sneaks into such ALG by using deception. He lets himself down in view of the enemy on an imaginary site far away from the actual ALG location and thereafter flies low over the ground, manoeuvring at low heights and low speeds, sensing his way through pre-selected routes to sneak into the safety of own ALG. The landing drills and speed controls for landing are done at heights well below 20 feet where margins of error are fractional.

Landing techniques: The specialisation in landing under the worst conditions consists of developing an ability to touch down at a predetermined point on a confined ALG at the minimum possible speed with the shortest possible final approach run. The touch-down limits are well under five yards of the predetermined point. The approach speeds are barely over the stalling speeds and constantly as low as plus two knots over the stall. The final glide path at such speeds is controlled on the throttle even for minor variation in the surface wind speeds. In valleys and jungles the problem often centres on how short the final part of the straight and descending component of the approach can be made. Often this necessitates getting into the straight approach from slow-speed, steep turns with the speed and sink fully controlled barely above the stalling speed.

TRAINING STANDARDS

The techniques of air OP flying, as seen above, are full of specialisation. Routine flying without including such techniques carry no training value to fit the

pilot for an exacting role in operations. The training in air OP units are, therefore, constant and continuous.

CONCLUSION

Air OP flying techniques aim to perfect the lower-limit flying techniques where limits for margins of errors are fractional. Its flying speeds and manoeuvres are often at the hugging limits of its stalling speeds. The flying heights in operations are often brought down to ground level. The ALG limits are extremely minimal. Its take-off path, circuit pattern and landing run are unconventional and involve specialised techniques. These essential requirements constitute the standards to be achieved by an air OP pilot to fit himself for operations. Such standards demand constant, hard and severe training.

The perfection of these techniques guarantees to the Army that the air OP is available for all eventualities to function to the best of its ability in its role under all terrain and climatic conditions.

There are no short cuts in training for specialisation, when perfection is the stringent requirement for success in operations.

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OFFICER TRADITION IN THE INDIAN ARMY

BY STEPHEN P. COHEN

INTRODUCTION

The traditions and past history of the Indian Army have always been a matter of great interest both for the military of India and for the general public, and the interest has grown, although perhaps not quickly enough, with the achievement of Independence. But the typical re-examination of these traditions has tended to concentrate on several specific areas of interest, which while important, are not the only important parts of the heritage of the past. For example, there are many studies of the sepoy, the most famous battles in which units of the Indian Army participated, and studies of particular units themselves, but there have been few if any attempts to systematically evaluate the nature of the heritage of the officers of the military, the development of a professional officer corps in India, and the most important continuing problems which faced the officer-class in the British period. There seems to be no better place than the pages of this Journal to re-examine some of the traditions and heritage of the officer corps of the military in India, with a critical eye for their relevance and importance to the problems of today. We will move in our characterisation of the "outlook" of the military in British India from the question of the relationship of the officer to his troops, through the broader question of the relationship of the officer to the government in power and to the ultimate problem of the officer's view of Indian society in general and the role of the military to that society. We have selected these problems for specific examination because they are not outgrowths of the colonial situation, although the solutions the British found to them were influenced by that situation, but because they are general to all armies, and because the same problems exist in more or less the same form today. These are problems which arise not out of colonial India, but from India itself, problems which were linked to nationalist and colonialist arguments, but which are in reality relatively permanent features of the Indian scene, or of any political system of the complexity and magnitude of the Indian system.

THE OFFICER AND THE SEPOY

ONE of the greatest objects of interest of those—both Indian and British—who have studied the military aspects of British rule in India has been the devices used by an alien ruling class to control indigenous troops, and effectively use them to conquer a sub-continent. It need hardly be pointed out that there were frequent failures of control, due to many causes, but by and large the control was so successful that the traditions and customs which were developed to maintain it deserve our attention.

Far from there being a traditional accepted relationship between British officer and Indian sepoy, from the earliest days of the Company, there was a continual internal division among the British themselves as to what the correct answer was to the problem of recruiting loyal troops.

The British were faced with an extraordinary problem in recruiting an army from Indian society which was to be used against other members of the same society, as well as against non-Indian rivals. They ultimately solved their problem after the Mutiny quite successfully by avoiding the mixing of men from different regions and by posting different regional and class groups in such a way that they formed a check and balance upon each other. In view of the Imperial context of British rule, such an organisation was extremely useful in preventing or limiting any nationalist rebellion (or any rebellion based on non-political grievances as well). There were (and are) good military reasons for a caste/class-based military organisation, at least in a non-technical area. Such an organisation simplifies the command and control problem, if officers understand a common language; it also simplifies some aspects of logistical supply, if a particular caste or class of sepoy requires special food or clothing, for example.

There were, however, different competing notions of the best way to organise the sepoy, and the type of sepoy which should be recruited by the British.

Perhaps the most extreme position was typified by those who wanted to Christianize the Indian soldier, and at the same time attempt to extend the base of Christian-Indians from which recruits could be drawn. This view, carried into practice, resulted in some of the most notorious incidents in the history of the Indian Army, as an example of which we might take the Vellore Mutiny of 1807. In this case Hindu sepoys were required to wear a part-leather turban; their commander, a fanatical Christian, refused to yield to their protests, and they ultimately mutinied when they were forced to wear the turban. The defence of the commander illustrates only too well one strand in the "British tradition"; he argued that the turbans could not have been taken as a threat by the sepoys to their religion, for the Christianity practised by the English military was so poor, and they were so undevout, that only the most ignorant Indians would fear conversion or think that the English would want to convert them. Paradoxically, he argued that the number of chapels and chaplains in India should be increased, so that the Sepoy would be officered by more religious and hence more competent officers¹. After the Mutiny of 1857, there was produced a large body of literature, frequently written by the clergy, but also by military men, which similarly argued that more, not less (Christian) religion both in and out of the Indian Army was required.

¹ The officer was Gen. Hay McDowall, C-in-C, Ft. St. George Presidency. See Gt. Britain, Parliamentary Papers, Vol. 8, 1812-13 (House of Commons).

While some of the British military equated religious identification with political loyalty, others sought a more sophisticated solution to the problem, and contributed significantly to the tradition of the British in India. The "Punjab school" was one of the most creative of these subtraditions, in the military field as well as in civil administration. Col. Hodgson, of Hodgson's Horse fame, clearly saw to the heart of some of the problems of establishing a firm and safe relationship with the Indian sepoy. He argued that a sheer mercenary relationship was not good enough, but that the sepoy should be brought into the British sphere, not by religious conversion, but by sharing the vision of a new, modern India.

One cannot purchase the trust and honesty of a man, Hodgson argued, one must earn it. "It would be a grand political victory", he wrote, "to induce the Sepahees to identify themselves, morally, with these noble undertakings of a paternal government. The development of this feeling would be the first and most important step towards the conversion of a mercenary into a *patriotic army*"² Hodgson and others of the Punjab school, such as Henry Lawrence, argued that the ranks of the officer class should be opened up to Indians, so that ambitious and able sepoys could look forward to unlimited promotion and opportunity in the Army. Here was a school of thought which was genuinely interested in the development of India as an economic and social whole, and which realized that the Indian sub-continent could not be held forever by the British. Their goal was an army which was devoted to public service, which was officered by professionals of good character and soldierly bearing, and in which Indians of all classes and races found opportunity and honour at all levels. While the substance of the arguments changed through the years, the broad attitudes and outlook towards the sepoy which have been briefly described, carried on right up to Independence. The theory of the martial races was developed and elaborated upon, and the image of the tough Gurkha replaced that of the Christian sepoy as the epitome of loyalty for some; others realized that the development of the martial races theory was based only in part on a real difference in fighting quality, and more upon historical accident and strategic necessity. For example, the units which stood by the British in 1857-58 were generally regarded as more "martial" than those that rebelled, and recruitment was accordingly changed in the following years. Even then, in Kitchener's tenure as C-in-C, when it proved more economical to raise troops in the North—where the fighting was occurring—Madras units were dropped and according to the mythology, were retroactively classified as non-martial. Lawrence's dictum was in this case forgotten, although it was later recalled and put into practice in World War II: "Courage goes much by opinion; and many a man behaves as a hero or a coward, according as he is expected to behave."

² See Hodgson's pamphlet, "Thoughts and Opinions on the Indian Army," London, 1853, p. 53. For a similar view see Sir Henry Lawrence, *Essays on the Indian Army and Oudh*, which reprints a series of provocative articles which first appeared in the *Calcutta Review* in the 1840's.

THE OFFICER CORPS AND THE STATE

If contemporary Indians sometimes criticise the devices used by the British officer to control the sepoy, there are few complaints at the tradition of civilian control over the officer. This is one heritage which Indians and British alike may be justly proud of, especially when one considers the difficulties of other nations which were formerly under colonial control. Yet, as in the case of the proper way to establish a loyal and efficient group of jawans, there was disagreement among the British as to the proper relationship of civilian to military, although one hears less of the seamy side of this problem. From the very earliest years of the British East India Company, the civilian and political leadership was plagued by a series of demands, conspiracies, and attempted coups by British officers serving in India; these were gradually reduced as the nature of the officer corps was made more professional and the amenities of the military were improved, but a residue of resentment at civilian control remained. Within the broad tradition of civilian control some military men attempted to establish a sub-tradition in which "purely military" matters were to be decided upon exclusively by military men alone. Immediately after the Rebellion of 1857, there was a clamour among civilian and military alike to remove the Commander-in-Chief (India) from the control of the Governor-General, and make him responsible only to the Commander-in-Chief in England, Queen Victoria's cousin, the Duke of Cambridge. The Duke himself was eager to obtain control over the military establishment in India, and attempted to use it to dispense patronage to his favourites. He was blocked, fortunately, for several Viceroys had a difficult enough time with their military. In fact, as late as 1905, the Commander-in-Chief, Lord Kitchener, succeeded in forcing the resignation of Lord Curzon, and in this momentous quarrel, one of the issues at least was the question of civilian supremacy. It is worthwhile examining the arguments of Kitchener and his supporters, for they represent one strand of the British tradition which was on occasion a very disruptive factor in the maintenance of civilian control. Briefly, Kitchener and his supporters argued that there was an exclusively military sphere of activity, and that any meddling by civilians in military matters was wrong and should not be permitted, just as meddling by military men in political matters was wrong. The difficulty, of course, lay in what one defined as "purely military" and what was to be done when civilian and military disagreed as to the definition of their respective proper spheres of action. Kitchener and his allies argued, for example, that whenever a state went to war, the military should be given a relatively free hand in conducting the war, and that only when military victory had been won would political matters be considered; this is an approach not dissimilar to that of General Douglas MacArthur in the Korean War. They also argued that administration, discipline, and organisation were "purely military" matters, and that civilians had no right to interfere in the internal military structure. Lord Curzon replied—in vain—that to maintain the principle

of civilian supremacy, he had to have complete freedom to interfere in military matters at any level, and that included the disciplining of relatively low ranking officers, as well as complete direction of the conduct of warfare. There is, of course, no absolute guide in such a controversy, and neither Kitchener nor Curzon were completely justified in their stands, but the episode shows how much strength the military had in certain matters. More recently we have another example of civil-military conflict in India when the bulk (but by no means all) of the Indian Army officer corps resisted the gradual Indianisation of the officer ranks; the most effective argument that the die-hard elements in the military raised against Indianisation was that it had to proceed at a minimal rate for the military efficiency of the Army to be maintained; since there were few civilians expert enough to challenge this judgment, even among those who were aware of the need to Indianise, it was difficult to proceed at the rate which was feasible.

In summary, the problem of civilian control is a case in which the "tradition" of the British period is not quite so clear-cut as it might appear on a superficial examination. Certainly, compared with other colonial regimes, the British in India emphasised the principle of civilian control, but in the actual execution of the principle—especially when it came into conflict with sometimes sound arguments from the military that military efficiency and a purely military sphere of activity was being hampered and imposed upon, the principle was on occasion broken, or at least severely bent.

THE OFFICER AND INDIAN SOCIETY

We have hinted above at a divergence in outlook among the British officers in the Indian military on matters of social policy and the principles which should guide the ruling leadership in India in our examination of some attitudes towards the proper relationship of the sepoy to the British. It is worth exploring a little further the attitudes of the military towards the nature of their obligation to India, for they had to face some problems which were not entirely due to the Imperial relationship.

For example, many officers (and civilians) felt that it was the very nature of Indian society which demanded a particularly paternalistic and autocratic rule. In thinking over this problem, one ex-Indian Army officer eloquently expressed this view thusly:

The paternal system consists of one clean-bred, perfectly honest and unbribable Englishman, standing under a tree and, according to his lights, without law or legal procedure, deciding cases on commonsense lines, and to the best of his ability. That is the system which suits those vast millions of the majority.³

³ Maj.-Gen. Sir George Younghusband, *A Soldier's Memories* (London: Herbert Jenkins Ltd., 1917), p. 268.

"Those vast millions" would be ready for self-government only some day in the far-off future, but until then they needed "straight, firm, paternal government, and the less the entanglements of the law enter into it the better". The outlook that these statements express might have had some justification in the 19th century, but as time passed, and the development of a competent modern Indian political leadership continued, they became more and more anachronistic. In large part, British officers serving in the Indian Army were relatively isolated from the urban communities where Indian political development was most visible; in their devotion to duty and military routine, few of them had the opportunity to appreciate the diversity and growing dynamism of the Indian intellectual community, and as a consequence individuals with a great understanding of military matters but a primitive sophistication in non-military Indian matters occasionally reached positions of great importance. The complaint of Indian nationalists that the British military were reactionary was not without its justification, although there were many individuals of great ability and sophistication who did rise to the top. On the whole the British Indian Army officers were more conservative and limited in their outlook on Indian society and politics than the British on the civilian side. This created a tension which was only partially eased by the principle of civilian control, for within the military itself, it was difficult for civilians to interfere.

Retired Indian Army officers were prominent in such organisations as the India Defence League, a British-based association of individuals dedicated to retaining every foot of Imperial territory, which flourished during the 1930's.

Within the generally conservative outlook of the British Indian Army officer cadre there was, however, a genuine interest in meeting some of the problems of Indian society, at least within the military itself. The language problem, for example, was one which had to be met and solved if the Military was to function effectively, and here the military was actually pushing the civil administration for a common language. Urdu-Hindi, Hindustani, Roman Urdu, all were advocated, and even Esperanto had its supporters. So did "Basic English", which was urged by some as the way to permit all of Britain's colonial subjects to communicate with each other readily. The British Indian Army officers were also not without a great deal of experience with village and rural India, if only through their periodic visits to their troops' home villages. They all came to know a great deal about a limited area of Indian society. In short, some took the opportunity to contribute something more to India than mere military expertise, while others were content with a limited participation. There were not one but several sub-traditions.

CONCLUSION

In concluding this examination of the traditions of British military rule in India, it might be useful to highlight some aspects of the traditions which are now undergoing change, or which are challenged by the change in Indian political context.

The British like to point to their officer-sepoy relationship and claim that it was in many ways extremely democratic. Officers and troops fought together, sharing the common risk of death, which made them equal at least in comparison with the citizen. They also worked and trained together, and frequently engaged in sports together. Despite this, there were two strong factors which made for a hierarchical or paternalistic relationship: the officers were emotionally, ethnically, and culturally closer to each other than to their troops, and there was a technical and educational gap between them which was rarely bridgeable. With the onset of Indianisation, the many non-technical differences between officer and jawan have disappeared, and if anything, the officer must work harder to earn the same respect given his English predecessor. There is another difference also, and that is that some of the most important justifications for maintaining the Army on a caste basis have disappeared. There is no longer the pervading fear of a nationalist rebellion, and if the old system is to be perpetuated, it must be thoroughly justified (and probably is) on the grounds that men simply fight better when they are organised into units which have their own traditions and history (although this can be carried too far).

Just as the change from an Imperial to a democratic context has altered but not eliminated the general problem of sepoy-officer relationship, it has transformed but not removed the general problem of officer-civilian relations. Now there is no longer any higher authority for the military to appeal to over the head of civilian leadership, and the obligation for both military and civilian to appreciate each other's problems is thereby increased. It is also compounded by the relative inexperience of both civilian and military, although the seventeen years of freedom has eased this problem somewhat. If any lesson is to be drawn from the traditions of British officer-civilian relations in India, it is that the slogan of civilian control over the military is not enough to guarantee that control, and both military and civilian leadership must develop the trust and understanding of confidence born out of understanding, which alone can see the state through difficult times.

Finally, the limited, narrow and generally reticent involvement of the British officer in the problems of Indian society is no longer an appropriate pose for an officer of free India; the Britisher's loyalty was ultimately to his home country, and many could afford to ignore some of the graver social problems of India (although in all fairness, a great number of them were active and interested in such problems), no educated and aware Indians can do this today and fulfil his responsibility as a citizen.

The basic lesson which we believe can be derived from this study of some traditions of the British military officers in India is that the old ways are not necessarily obsolete, but they must be justifiable in terms of the new sets of problems facing the Indian officer corps. Merely carrying on a tradition because the British found it useful is not enough; one must stop and ask whether the tradition was necessary because of the demands of Imperial control or because it met a military or social problem inherent in India itself. It is this writer's view that at least much of the British tradition is useful and necessary and can be retained, but only if it is constantly kept in mind that the British themselves, (along with many other countries) consciously and unconsciously "create" new traditions and standards in their military organisations, weeding out the useless and frivolous. The main dangers lie perhaps on two extremes; on the one hand the military organisation of any state cannot become so isolated and alien from the rest of society that it loses the confidence and understanding of society, and on the other hand, it must maintain itself as an efficient military organisation. It has, in other words, a nearly unique role in a nation, in that it must meet criteria of excellence established by both internal and external demands.

IN THE BEAM OF THE BEACON

BY MELVILLE de MELLOW, PADMA SHRI*

THE HEROES

ON many a mountain road, lashed by snow and wind and rain, stands a plain, white slab to the memory of some member of a Border Road Task Force, who, in his hour of trial, was not found wanting—who stayed with his machine in a desperate effort to save it, as it hurtled to destruction thousands of feet below into some lonely, rocky gorge. He could have jumped, but he did not, because the attitude of the driver to his machine, in these Task Forces, is akin to that of a Captain and his ship.

In NEFA, while the snow-bound areas are confined to the Sela feature, the rainfall ranges from 100 to 300 inches in the foothills region, creating problems of a very different nature.

In NEFA, Bhutan and Sikkim, landslides and floods add to the hazards of road-construction in the border areas. They levy a heavy toll of life and machines each year. In Sikkim, one dark night, on a bleak mountain, seventy-five men were buried in seconds, never to be seen again.

LADAKH—STAIRWAY TO THE ROOF OF THE WORLD

"Jhule" is Ladakhi for "Namasthe"—"Hi there" or "Good morning", "How are you"—or "good day". It's the key to all good things in Ladakh...a cup of butter-tea—a mug of "rice-brewed Chang beer"—or a lasting friendship—and it always brings a broad smile and a breezy "Jhule" in return, in spite of the sub-zero cold—the clouds of choking dust—the high winds or the steep climb. Ladakh is one of the world's highest inhabited lands, which does not dip below six thousand feet even in its lowest valleys. The thin air of this stairway to the roof of the world starves the heart and lungs of the fighting man and the engineer. Its lowest valley lies more than a mile above sea-level. Its highest mountain, K2, rises to 28,250 feet—only 787 feet lower than the summit of Everest. Alternate heating and freezing pulverises the bare rock slopes into a fine granite dust—and wind sweeps the dust into Sahara-like dunes. Dust...like talc...billows behind every footstep and moving wheel and mixes with the blowing snow. This, once little known and forgotten country, some two hundred miles broad from South to North by about three hundred long from East to West, contains a great portion of what is

*Chief Producer (Features), All India Radio.

the biggest massif of mountains in the world—the Karakoram. The greater part of inhabited Ladakh is in the big river valleys—Shyok, Indus and the Nubra. It is a country of gaunt, jagged peaks and saw-backed ridges and everywhere, sometimes in full view, sometimes hidden in curved valleys—are the glaciers—whence come tumbling down the silver waters, which are Ladakh's life-blood. Wherever water can be led down—in carefully built channels—there are fertile fields and trees—little oases of green, among barren red and chocolate-brown hills. Orchards of fruit trees in the lower parts of the Shyok and Indus boast the sweetest apples in the world—juicy mulberries, apricots and walnuts. Imagine a triple series of great mountains enclosing big river-valleys several miles broad, filled with fields and little villages. Sometimes, narrow gorges several thousand feet deep hold nothing but the rushing waters of the summer floods or the low frozen stream of winter. And there we were—in the latest model Japanese jeep coughing up the narrow ribbon of a cliff-hung road—an engineering feat by any standards anywhere in the world.

It is a land of vivid contrasts, especially if approached from Sonamarg. Your first shock is Macchoi with its bleak, huddled buildings. The dramatic suddenness of the change takes your breath away. Now you know, the Kashmir Valley is left behind. Trees disappear—the mountains are suddenly hard, dry and savage and the softness of nature deserts you. Here you enter a land of rock and dust, immense distances and great heights. A land where the sun scorches by day and water chills into ice at night; where life is hard and luxury unknown and where Nature's moods are unpredictable. Suddenly, you seem to become an infinitesimal dot in an immensity of space. You pass by the broad plain of Minimarg and the village of Matayan on a windswept plain—where no tree grows. In winter, these huts of rubble, stone and mud, are buried under deep snow. The road below Matayan sweeps round the base of a magnificent mass of limestone with splendid cliffs below—giant steps above—culminating in picturesque castellated forms—trap—porphyry—serpentine and granite—polished by the centuries—gleaming in beautiful colours—wet with the spray of the river. Onwards to Dras—the second coldest inhabited place in the world where a rank herbage called “prang” smothers the hillsides. By August the harvest is gathered in. By November the people creep into their dens for winter, emerging for a few hours daily when the sun shines. A strange, hard life, with few needs. Dras—a bleak and bare upland valley, more than ten thousand feet above the sea. Dras, with its wide spaces and blue mountain ranges—its great castellated dolomite crags with pinkish tint and purple shadows and away to the north, rocky mountains of ochre and brick-red and green—above which, snowy peaks, mostly virgin, lift their crests. Beyond Dras, yellow roses thrive in an annual rainfall of only two inches. You enter Kargil—a great dreary stone plain—sparsely covered in early summer with worm-wood and other aromatic plants...a foretaste of the great plateaux of Eastern Ladakh—which stretch for hundreds of miles—inhabited only by a few

nomads and by herds of wild yaks. Numerous old forts, with villages clustered about their feet, dot the mountains. Kargil and the Suru river, under a halcyon golden sky—peaceful in pale sunshine gleaming over neat rows of apricot trees. Little canals, shaded by old gnarled willows—a young face with Mona Lisa eyes—at a darkened window—an unforgettable memory.

At Fotu La, you get your first glimpse of the Karakoram range. The silence here is absolute and, paradoxically, it becomes almost sound.

This then, is the backdrop to my story about the men of the Beacon Task Force, and to get this story, I did not have to travel far from the magnificent road these engineers have clawed out of the mountains, in fair weather and foul, so that men and materials can reach the front lines that face the deadly enemy—China.

THE MEN OF BEACON

They carry no rifles or revolvers—no grenades or mortars. They have no war-cry—but they do have a heart-warming slogan, which begins with the ringing call—“*Beacon Bole!*” A slight pause follows, and then, an explosion of sound, as all the Task Force members present yell in unison—“*Chang La!*”, which is their greatest achievement among many great achievements. Chang La! the highest road in the world, that wends its way through a mountain pass in Ladakh at a dizzy 18,370 feet. Chang La is the brightest gem in their coronet of achievements and every member of this Task Force is rightly proud of it.

In Ladakh, the “Beacon” Task Forces cover the land-route from Sonamarg to Leh via Kargil and from Leh to Chushul, both via the Chang Pass and along the Indus Valley route. In this region, both men and machines have to operate at heights exceeding 10,000 feet and undergo the rigours of a severe winter. At the beginning of summer each year the snow-drifts, varying in depth from 30 to 60 feet have to be cleared, as also avalanches. This is just what they were doing as we jeeped through the Zoji Pass in June last year. The snow still lay piled 40 feet on either side of the road.

They live with death, most part of the day and night—these men of the Beacon Task Force who are responsible for making and maintaining roads in Ladakh. Death! not necessarily from the enemy—beyond the next range of mountains—but from the dreaded avalanche—sudden and devastating—the landslides, the skid, the blinding blizzard—the brake that fails—the tyre that bursts. And, down below, waiting—thousands of feet below, is the gorge—or the treeless incline that leads to the icy grave—a frozen river.

They built this road, which is the life-line of our forces at the front, crouching in freezing bunkers; and they maintain it with a love and pride and enthusiasm that inspires anyone who has the good fortune to travel this road in their company and watch them in their daily work in freezing cold, and in blinding dust. Their

constant companions are "hypoxia" or lack of oxygen, that makes breathing difficult—bleeding from the nose and ears and the dreaded "pulmonary oedema"—waterlogging of the lungs—that strikes without warning and that can fell the strongest stalwart in a few seconds. In any skirmish with the enemy, it is "business as usual" for these engineers, for the line of communication has got to be kept open for the advance or the retreat. The enemy, in this part of the world, has made no distinction between the road builder and the combat soldier and many an engineer has fallen—under fire. In war and peace, continuous reconnaissance goes on apace. Reconnaissance of new routes or alternative routes. Any of these operations might lead into the deadly trap of an enemy ambush.

The story about the men of the "Beacon" Task Force, who live and work along the stretch of road from Sonamarg to the highest road in the world and beyond Chang La to Chushul, began for us at Baltal—among the birch-groves, under the high rampart of limestone framing the Zoji Pass, with its crimson potentillas streaked with orange, and its gentians—that grow in the glades of birch trees. This is river, forest and cliff scenery.

We had left behind Sonamarg, framed in hills, with its long meadow and its glacier valley, lying between 8,500 and 9,000 ft; its rolling slopes of wooded hills or gaunt serrated walls of limestone—sharp-cut against a cloudless blue sky. We took a last look at the rich wooded beauty of the Sindh Valley from a point near the summit. Here, the snow was late and heavy—avalanches had done their worst and Zojila was living up to its reputation—a place of ill-omen in spring! For all that—its height is of 11,500 feet—a pygmy among the passes we were to meet later—but a pygmy as unpredictable as the snow-storms and blizzards that lash it unremittingly, and with a suddenness that is awe-inspiring. At the head of Zoji La, we left the last straggling glades of silver birch—gnarled and twisted by their efforts to make headway against the snow. We stayed three days here for the purpose of acclimatisation and were the guests of the Task Force Commander in this area, Lieut.-Colonel Puri.

In happier times, Baltal was a tourists' paradise with its rugged beauty and its snow and pine-forests, that cling to mountain-tops like an army of Titans petrified at the moment of assault, its skirmishers, all but planted on the crest. It was here, many years ago, the Prime Minister spent his "honeymoon". The beauty remains—but this haven of peace is no longer the quietest place on earth. Bulldozers and rock crushers, plus all the myriad mechanical giants needed to build a road in this rocky region and beyond, are to be heard throughout the day and night—a non-stop cacophony of sound, matched only by frenzied activity. Here, the conversation is punctuated by the big blast and the weird scream of the rock drill—but one gets used to it as indeed one gets accustomed to the bitter weather! As we clutched a delicious mug of steaming cocoa and edged nearer the *bokhari* in the Officers Mess, we tried to visualise what Colonel Puri was talking

about when he said, "Temperatures, as long as we are here, go down to minus 15 degrees Centigrade by day, and minus 40 by night." But figures are pretty abstract things, so we asked Colonel Puri to tell us in everyday terms the sort of conditions they had to contend with. "Imagine to yourself", he said, "a driver of a vehicle pouring 'hot' water into his radiator. The drops that fall from the radiator, are frozen, before they reach the ground. Then again, take a convoy going along a road. The first vehicle develops mechanical trouble, and, within ten minutes, vehicles with their engines running have diesel frozen in their tanks. Or again, you go in for a hot bath in your wooden cabin. You put your mug down and start soaping your body. You reach for the mug again and its stuck to the table—frozen! Or again, you go to sleep and, as some people do, have a glass of water at your bedside table. You wake up in the morning and find the whole glass is frozen solid."

Colonel Puri later showed me a vertical stretch of rock about 600 yards short of a spur on which one turns to enter the Pass. He recalled an incident last November, when three of his officers tried to traverse those 600 yards for six anxious hours. But the wind velocity was so overwhelming that they could not make enough headway to enable them to reach the corner of the spur—and they had to turn back.

Or, again, a convoy was once negotiating a road—frozen over by heavy snowfalls, as smooth as glass. The vehicles began to skid. The result? A convoy, scheduled to be down the hill by six o'clock in the evening, limped into camp at two o'clock the following morning, in the teeth of a fearsome wind that very nearly blew the commander of the convoy, who got out into the road to direct the convoy down, off the hillside. A scarf—tightly wrapped around his neck and tucked into his tunic—was ripped off by the wind and never found again—while he himself lived to tell the tale only because two officers grabbed him and held him against the fury of the storm.

Here, at the start of the road, rain falls with a sudden intensity. Once started, it rains for three to four days at a stretch and, during this time, landslides are frequent. You travel about fifteen miles across the pass and you are suddenly in barren, arid and desolate country. No green thing here—no trees, no grass, no creeper—only rocks of all shapes and sizes and all colours. You travel another 30 miles. You peel off your tunic, then your sweater, and you find yourself feeling hot in a cotton shirt. Here you have to contend with problems of drainage and water and snow. You travel on and up—and you enter a landscape of sand and boulders and mountain peaks; boulders that can run to ten feet in diameter and perch precariously, one upon the other. A slight vibration from a machine, driven carelessly, and down comes the whole "slide"—sweeping away anything on the road, men or machines. Baltal mirrors what goes on—all along the 252-mile Srinagar-Leh Road—and beyond, to Chushul, via the Chang Pass at 18,370 feet.

It is in many ways a world of workshops, where men charge and weld and lathe—the home of the bulldozer and compressor. Rock-drills, like steel-fanged serpents, hiss their way into granite and dolomite, day in and day out. Compressors work the drilling machines that bore holes in the stubborn rocks for the big blast. This is a world where the recovery of a truck is cheered as an event to remember. But, there are also quieter corners of this world “under canvas”, where research goes on apace, as also mechanical analysis of the soil by sieving...far from the roar of the stone-crusher. The first automobile road from the outside world was built three years ago, but it is closed by snow and ice in winter.

Snow-crested peaks stab the sky on every hand. Eroding granite spreads thin soil on thirsty valley floors. Rainfall averages only three inches a year in this two-mile-high desert, but ditches, tapping snow-fed streams, turn these fields green and bountiful in the summer. Sunlight is so intense that two crops ripen in a summer. In Ladakh, the sub-zero cold quiets your pulse-beat, the dust underfoot silences every footfall.

There's a swirling, top-of-the-world cold here that can freeze a soldier's hand to his rifle.

IAF aircraft run a gauntlet of clouds, gales, violent air-pockets and 22,000-feet peaks.

At Gumri, it is a freezing white world of snowfields and glaciers and icy winds. We spent an evening with Chandigi Ram—OC of a Pioneer Company—a weather-beaten veteran with a back as straight as a ram-rod. He loved his men and they worshipped him. He told us about the men who came from Madras. When they first arrived, they wanted a quick posting out—so miserable were they in the cold. “Hold on,” he said, “In a short time you will love the cold so much that you won't want to go home.” And that's how it had worked out. Today, they were all pleading for an extension of their service in these areas. The reason? One Pioneer, who had been a programme-planner in AIR Bombay, put it this way. He said, “I suddenly tired of city life and wanted to escape it. I was getting weary of the insincerity of friends—the artificiality of life—and all this began affecting my work and happiness; so I decided to quit and come here to the mountains.” “Have you found the sort of happiness you were looking for?” I asked him. “More even than I had hoped for,” he quickly replied. “I have found a warmth of companionship here that I never thought existed anywhere in the world. This type of life gives one balance. It freezes out all that is small and selfish in one—and you find yourself always thinking of yourself as a member of a team. And, mark you, there is no other way to live here. Everyone helps everyone else, no matter what the task or the difficulty.” The soldier calls it “*esprit-de-corps*”—others call it camaraderie. Whatever it is, it is this cementing force that makes men work miracles in the most hazardous and trying conditions in the world.

SHAITANI NALA

We talked with another veteran, not in years but experience—Captain Nautiyal—as we stood in the shadow of the notorious *Shaitani Nala*, so named because of the toll it takes each year of men and machines. A few men, heavily clad in great coats, were moving about slowly in the vast snow-field below the road, prodding the ice with poles. “Are those men looking for something,” we asked, innocently. “Yes,” replied the Captain—almost in a reverent whisper—“they are looking for the body of a comrade and his machine that was buried with him—last November.” “What happened?” we asked. The Officer went on—in a just audible whisper—“Well, we were coming down this road in convoy, and one of our vehicles got bogged down—so we all stopped. The last vehicle was about 50 yards away from the front jeep. We began pushing the bogged-down jeep out of the snow, when suddenly, a blizzard began to blow—so intense, that it was impossible to see one’s outstretched hand—and almost immediately, an avalanche came hurtling down on us. We were buried, all of us. Well, we scrambled out and found one of our chaps buried up to his neck and unable to move. So I sent a man racing to the rear to get a shovel with which to dig him out. Imagine our shock when he came running back almost immediately, from the rear, to tell us that the vehicle at the end of the line was missing, along with its Operator. We left a few men to dig our Jawan out and the rest of us raced to the rear, to find 20 feet of snow on the spot where the vehicle had been. Three hundred feet below the road we sighted a black object in the snow. We suspected that this was the machine. We dug around it near the driver’s-seat but there was no sign of the operator. We shouted—but there was no response. Meanwhile, the blizzard grew in intensity and, eventually, we were forced to abandon the search as some of us were beginning to get frost-bite. So passed winter. But the moment we were able to clear the road to this point in spring, we put up a tent here with a search party, whose job it is to keep watching and digging, day after day, till the body and the machine is found. This day and night vigil is the least we can do for a fallen comrade who is lying somewhere there, under all this accumulation of winter snow.” We told him that we thought that this was a wonderful thing for a man to know, that his comrades cared about him so much. Captain Nautiyal replied, “Well, Sir, a man is a man. He belongs to someone. He takes orders and never questions the one giving the order. So—we are all responsible for his life. It is our duty to him and to the country, which we both serve.”

But the final picture of the problems, achievements and morale of these men was quietly but sensitively drawn by Lieut.-Colonel Puri, the Task Force Commander in this Sector, as we prepared to begin the second leg of our road journey down the Baltal-Leh road. “Up to as late as November 11, 1961, when temperatures were well below zero, the chaps here, on their own accord, have worked night shifts. They have drilled at night in sub-zero temperatures, so that the rocks could be blasted the first thing in the morning, and the machines could clear. In

this work, I am reminded of many people: Lance Naik Bishan Datt, taking his machine up incredible and fantastic slopes, well-knowing that a single slip would bring both him and his machine hurtling down into the gorge below. Havildar Swaran Singh—a pint-sized chap, something like me—but always cheerful! Three times this Havildar escaped certain death when he was caught in landslides—and when he comes up to me at the end of it all, he says to me with a twinkle in his eye, ‘Sahib—there’s an advantage in being short. When those slides came down, I just jumped like a rabbit—and they missed me.’ So, there it is—a smiling face at all times, and, at all times, inspiring men under him. Major Harbans Singh, going on 50 years of age: on the road by six o’clock every morning during snow clearance, and back in the mess—not before ten o’clock at night. A really shining example to his men.” There was only one question left after that—and I put it bluntly. “During your working season, Colonel Puri,” I asked, “how many days do you lose in Gazetted Holidays?” Back came the answer—without a moment’s hesitation—“I think I speak for the whole of Beacon Task Force when I tell you, Sir, that during the working season of 1961 we worked every single day except three days—we observed three holidays in the whole season—‘Janam Ashtami’, when the boys wanted to have a little Puja, ‘Independence Day, August 15th’ and the ‘2nd of October—Gandhiji’s Birthday.’” The statement speaks for itself.

FOTU LA AND THE HANGROO LOOPS

And so we said goodbye to Colonel Puri and his men and moved down the road into the next sector, to meet Lieut.-Colonel Shanti Moy Ghatak, Commander of the task force responsible for the Kargil-Leh Section. Starting from Kargil, between the Suru and Waka Rivers, at a height of 9,500 feet above sea level, we crossed the “Fotu La” at 13,400 feet. There was a strong wind blowing at the time and I had my first uneasy feeling of breathlessness. I jumped down three feet to take a picture—and while climbing back on to the road, I felt weaker than at any time along that road. It was the highest I had ever been in my life, up to that moment—and though I did go much higher later, on this assignment, I can never quite get out of my mind the feeling of those few moments at Fotu La—a light feeling in the head—butterflies in the stomach and uncontrollable breathlessness. My confidence was, however, restored a short while later, when I saw a famous Indian Regiment march through the pass to the skirl of bagpipes—and a demonstration of immaculate marching that equalled anything seen on Rajpath in New Delhi, on Republic Day! Fotu La separates Bodh Karbu from Yuru, where the first of the great monasteries is situated. Descending to the Indus River at about 10,000 feet, we crossed it and then passed Zorawar Singh’s Fort where he once collected toll-money from the caravans that journeyed to the East. Yesterday—horses galloped by. Today—jeeps and cars and buses were more in evidence.

What struck us about this sector was its utter barrenness. It was barren as

few areas in the world are barren. However, where water was available, it was a green and inviting oasis bursting with the finest apples and apricots. The people were simple and friendly, most of whom had made the transition from medieval times to the 20th century in the course of a few years. Roads have been made in places where—upto three years ago—a vehicle was never seen. Today, hundreds of lorries ply to fixed timings conveying men and food and stores from the rest of India to Leh and beyond.

From Fotu La, going down to the Indus, we encountered the Hangroo Loops—18 “zigs”, descending dizzyingly 2,500 feet to the river—where, in the summer of 1962, when the first five-ton lorry convoy was passed—four men met their death. We talked to Mr. Kamra, who was an eye-witness to the tragedy. “I will never forget the 29th May”, he said, “It was six in the evening. I was in one of the fifty vehicles passing through the 18th loop of the Hangroo loops. The road was covered with snow and we were going at a snail’s pace. My vehicle was No. 2 in the line. No sooner had the first vehicle taken the turn, there came, from somewhere, an earth-shattering sound! Our vehicles screeched to a halt. We ran towards the loop from which the big sound came, and stood there, petrified and stunned by what we saw. Vehicle Number One was bouncing down the embankment like a rubber ball. It stopped—400 feet below—on its hood. It is a sight I shall never forget.”

The greenness of Kargil, is more than usually joyful because the last few miles, before you enter it, are tedious—with dismal stretches of sand. Now, at last, you can feast your eyes on groves of fruit trees, bubbling rills of pure water and even the wasteground here is smothered in purple iris, trained by the peasants in tufted belts, to mark the division of their fields. The dead wastes, for the moment, are behind you. Before you, now—the cornfields and the shady groves. These unexpected encounters with greenness were always dramatic. Dras, is already just a dusty memory. But, sooner or later, any conversation in Ladakh veers round to the weather, and already Colonel Ghatak was saying, “From the middle of September, our summer fades out and by October we have our first snowfall. The grey desolation of the hills begins to look soft and white, and the days get shorter—and the nights, colder. Soon, we are cut off from the world by road, and depend on aircraft for all our needs.”

The intense cold, makes work difficult and even simple ordinary tasks begin to look insuperable, and aggravated by sudden weather-changes, end in disaster.

It was Captain Dhawan who related one such story to me when I asked him to recall some incident that stood out in his memory like a sore thumb. “Well, I would say it was the day I got a report that the telephone line beyond Khalsi had been damaged. It was 12 noon. I sent a party to repair the line. For 24 hours

neither was the line repaired nor did I get word from the working-party. After 48 hours I got news that the vehicle had met with an accident and caromed into the freezing waters of the Indus. All five occupants perished. It took us three days to recover the dead bodies, and the sight still haunts me. But, these things have to be taken in one's stride, because Death is always near. As we look at it—it's all in the day's work."

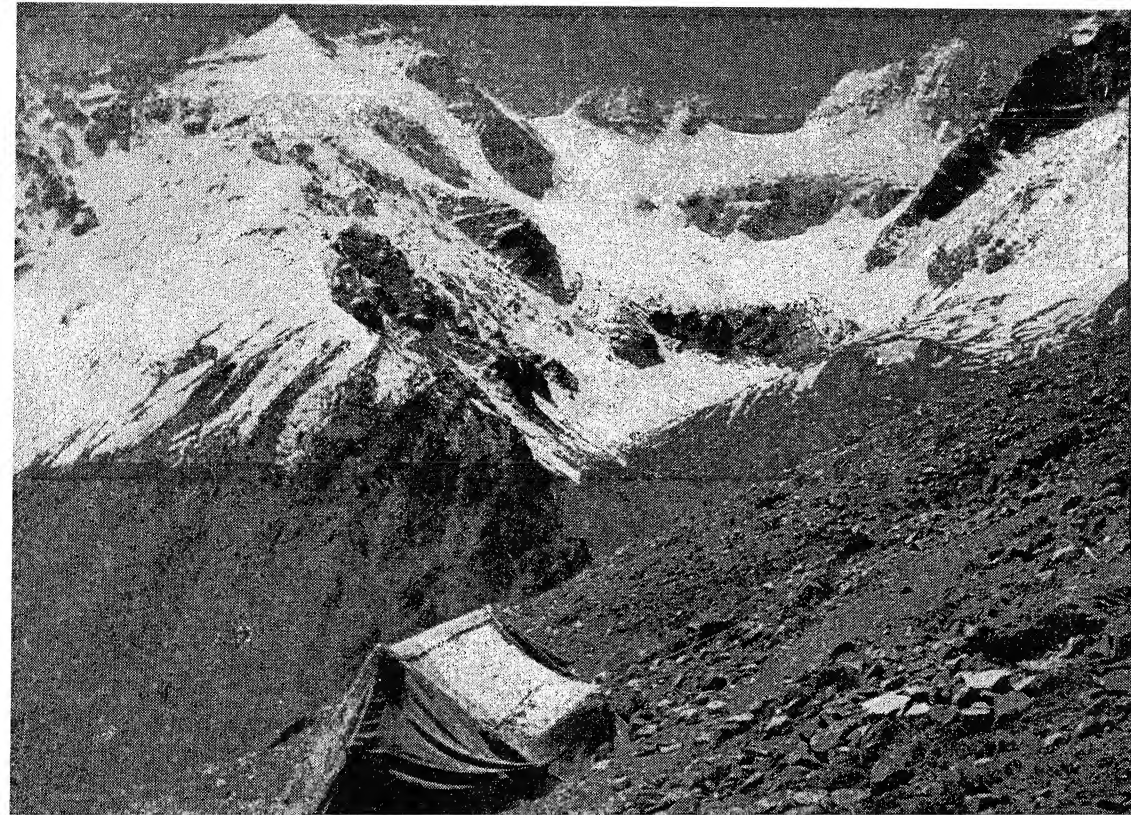
LOYAL LOCALS

We talked with Ajit Nag of the Frontier Administrative Service, who is responsible for two tehsils, Kargil and Zaskar. We particularly wanted to know how the locals had reacted to the threat of Chinese aggression. "Excellent" he told me, with pride and enthusiasm. "They came in large numbers, without any pressure or, for that matter, invitation. They offered themselves for Home Guard Training, village Razakars and whatever was possible. So we started—and, so far, we have recruited more than 600 who are in regular training. The whole countryside was awakened and they came forward with money and ornaments and whatever they had of any value. They were prepared to defend their motherland to the last drop of their blood." And this 'togetherness' has been helped by the building of these border roads. People, nowadays, do not feel so isolated from the rest of the country—and that is a wonderful thing—to see these remote parts suddenly become conscious of the fact that they are an important part of a large country like India. Immediately they desire to know more and travel more.

LAMAYARU AND MULBEK

At eventide, the jagged rows of peaks that form the sides of the Kharbu Valley fade slowly from orange, through a dull red, into Bible black. A continuous line of huge "mane" walls and white chortens, that house relics of ashes of deceased Lamas, border the road, forming a sacred way—like prayers frozen in stone and plaster—leading the eyes, as it were, to Lamayaru Monastery, white with a red frieze under the roof—a stirring sight at sunset! Below Lamayaru, a rocky defile, hemmed in by sheer cliff, falls away in a succession of huge steps down towards the Indus. The sky, far overhead, shows as a narrow strip of blue. Along the way, huge chortens suggest a breakwater with light-houses except that the ocean here is sand instead of water. Onwards to Saspul we jeeped; into a world of succulent apricots—tawny crops ripe for the sickle, in the dense shadow of willow trees. Past catmint-covered walls, peasants winnowing—some treading out the grain, while others sing—a little breathlessly—but sing nonetheless.

At Mulbek you realise that you are in Buddhist country. The symbols of Lamaism are everywhere. Now start the prayer-wheels covered with inscribed slabs of stone, bearing the universal formula, "Om Mane Padma Om"—"O God, the Jewel in the Lotus."



A reconnaissance party, scouting for new routes to improve the logistics in the Himalayas, camped in the shadow of the eternal snows.

Road-builders break virgin soil—their pneumatic drills boring into the rock to prepare for blasting it—as they cut the alignment of a new border road.



A placid file of sheep wends its tinkling way in the gentle, afternoon sun. They are bound for the lofty heights where new roads are being built. Their cargo is High Explosive.



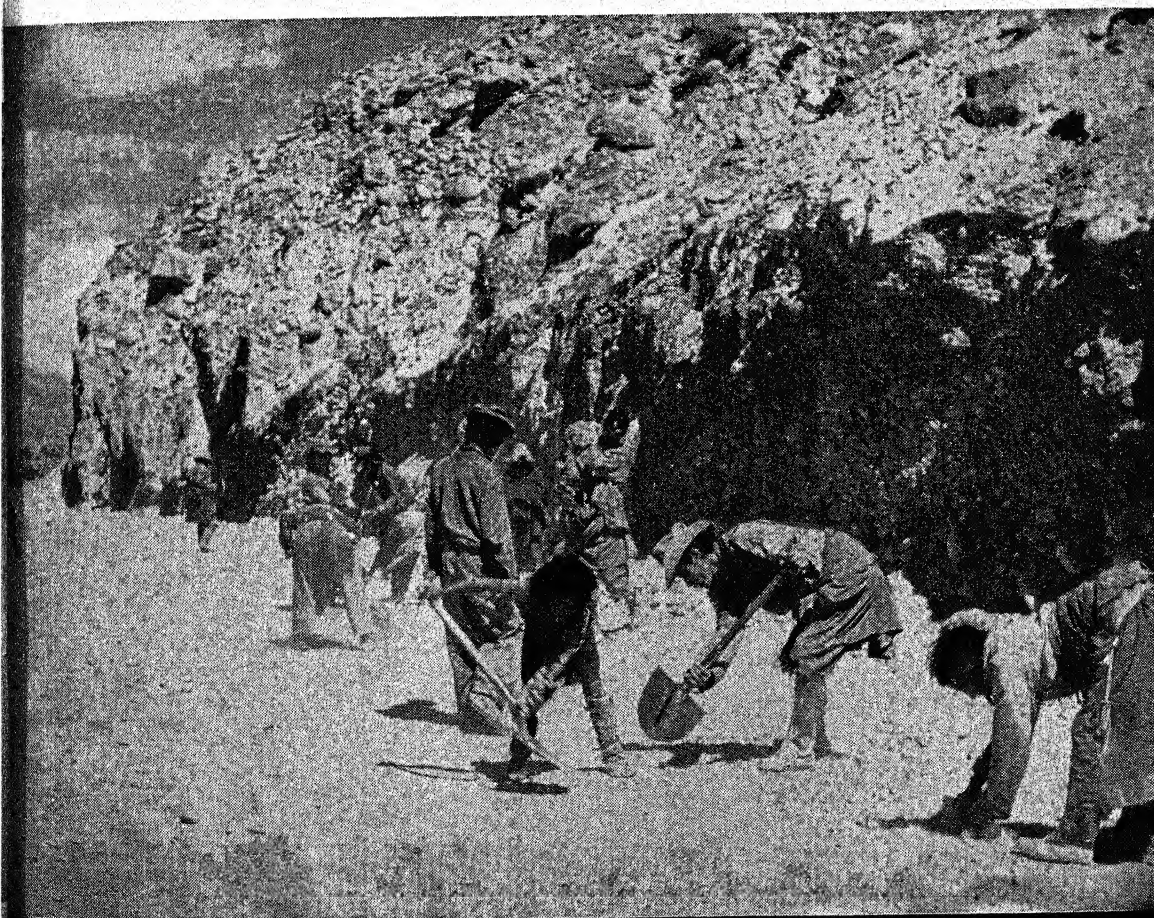
Men prepare to recover a bulldozer which met with an accident while clearing a mountain slide. The operator was smothered to death under the debris.

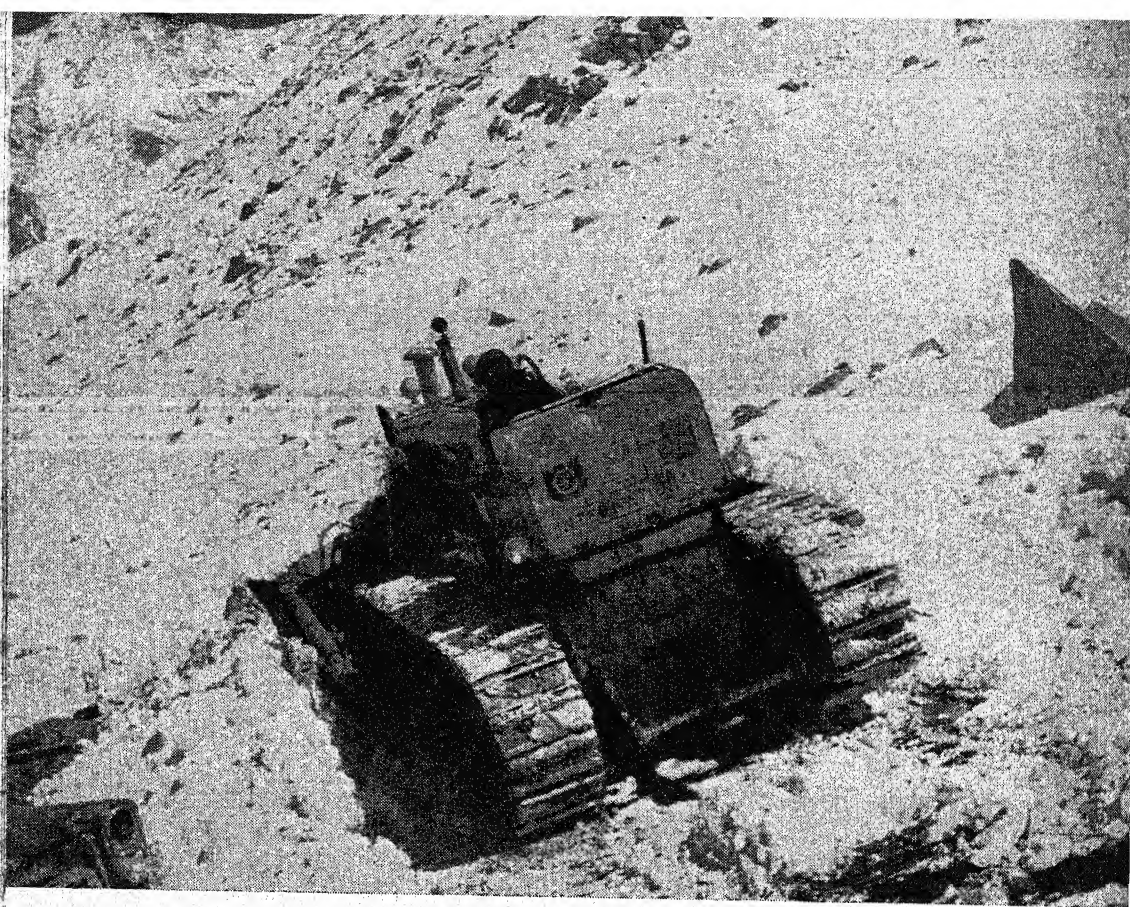




A rescue team using crowbars to prise away the rock which has fallen upon a bulldozer.

Sturdy Tibetan refugees give the finishing touches to a new border road.





In winter, the loftier of the passes are buried under deep snow which renders them impassable. When the spring comes, a long file of men and beetle-busy bulldozers attacks the ice and snow—and soon, the road is humming with traffic again.



A civilian visitor, overcome by giddiness sits down for a moment to regain his breath at the foot of the Memorial to the Beacon Project personnel who built the "highest road in the World" across the Chang La in Ladakh.

From Mulbek Monastery, looking across the valley one gets a splendid view of the mountain with bold buttress—castellated cliffs and jutting towers. Like the peaks near Fotu-La, they suggest organ pipes—so vertical are the ridges, so jagged the descending outline—each pipe a different colour, so that in rapid succession we have pale-green, purple, yellow, grey, orange and chocolate, each colour corresponding with a layer of the slate, shale, limestone or trap strata.

An unforgettable sight was the Mulbek Gompa at sundown. Perched on the summit of a precipitous hill, its white and red walls were outlined in the golden light of evening. Banners, like closed parasols, marked the angles of the roof. At Khalsi—an oasis of willow trees among drab brown hills—we met Major Basant Singh of the Engineers—and here we said goodbye to Lieut.-Colonel Ghatak who was to fly to Delhi the next morning. The culture changes to Buddhist at Khalsi, and Khalsi has an atmosphere that is distinctive. Whether it springs from the greenness of the countryside or the cheery demeanour of the locals or a combination of both I would not know, but there is nothing quite like an evening in Khalsi, under the stars at 10,000 feet—watching troupe after troupe of dancers, ranging in age from eight to eighty, shuffling around in colourful costumes to the blaring of “shehnai” and drum, while the audience warm up with mug after mug of “chang”—the popular rice-brew, without which no evening in Ladakh is complete! And, when the dancers begin to get their share, the tempo changes perceptibly and what, earlier, was a slow-beat and a lazy shuffle, now becomes a frenetic and delirious paroxysm of movement and colour and rhythm. It was a night to remember, and by the end of the show, even the Pavlovas of Ladakh ranging in age from seventy to eighty, or perhaps even older—decided that they were still better than the younger generation, and so captured the floor. I have never heard such a cheer go up from any audience anywhere. They really love their “faded” artistes in Khalsi!

BASGO BELLES

I passed through Basgo, with its apple orchards and its apple-cheeked belles. The “Basgo belles” are known for their beauty! Possibly, in another day and age, Turkoman raiders on pony-back passed this way. Today we passed through the stony gorges and sandy plains in the latest model jeep, being well on the way to Leh. We thought of Major Bhatia who gave us a wonderful lunch of ‘pulao’ and chicken-curry in that desolate of desolate places—Bodh Kharbu—where the mountains seem to press down on you. Here, at 11,000 feet, his was the highest camp on the Kargil-Leh Road. In winter, according to Major Bhatia, almost everything except fuel and kerosene oil freezes! One day, they succeeded in getting an orange, which had to be boiled first before it could be eaten! To make a fried egg, it first had to be boiled and then fried! And yet, the morale was extremely high. The Major told us a story to illustrate this. It was the last Diwali Day and there was a road-block in his sector. The road had to be

cleared, and so, blasting went on throughout the day—and Diwali celebrations had to be cancelled. At the end of the day, the Major overheard a man telling his friend: "Never mind, old chap, we couldn't have the Diwali 'lights',—but we had plenty of 'bangs' to celebrate it with!"

As we began the last lap of the dusty road to Leh, we recalled the words of Colonel Ghatak—"And so we pass the winter. When the sun shines, our temperatures are in the region of 25 degrees Centigrade. When the sun goes down, it is considerably less. We are shut in from the world except when the weather permits aircraft to fly, and our main link with the outside world is over the radio. And, so, the winter merges gradually into spring. The snows melt. The fields are green again. The trees burst into leaf—and the first vehicle from the outside world comes coughing up the road. All's right with the world and work starts all over again!"

THE HIGHEST ROAD IN THE WORLD

"You are entering the highest road in the world," says the blue sign at the foot of a mountain range in Ladakh. The road leads across the 18,370-foot pass called Chang, and is the life-line for our forces guarding the Himalayan Frontier against China. In the book of 'Beacon' achievements, this is surely the Golden Page. Up there, men don't talk much—for breath is precious. Machines interpret intentions. An icy wind screams around the monument that marks the top of the Chang Pass—a wind that seems to warn of sudden storms and avalanches, landslides—and death around the next corner. But the height has its compensations, for the view from here is spell-binding. Mountains on top of mountains, like white nails in the sky. The wild ranges of the mighty Himalaya stretch in all directions to the far horizon.

As I stood here, on the highest road in the world—a road still lined with snow and sculptured ice moulded by sun and wind into fantastic shapes—I spurned an oxygen mask and had a rather breathless interview with Brigadier B.N. Das, Chief Engineer of Project 'Beacon' and the overall commander of all border roads in Ladakh. His words tell part of a great feat of engineering and endurance by men anywhere in the world. "We built this road," he said, "when the temperature was minus 40 degrees Fahrenheit. The working efficiency of men and machines at that temperature was less than 50 per cent. It was very difficult to start the machines. Fuel froze and batteries went dead during the night. To start the machines in the morning took anything from two to three hours. But the men struggled valiantly—and finished the job on schedule." To reach this pinnacle of engineering skill and achievement we travelled a hair-raising road that clings to the mountainside. A road on which men and vehicles run quickly out of breath and power and where the slightest miscalculation can spell certain disaster. Lieut.-Colonel Douglas D'Silva is the Task Force Commander in this area and he told us that to build the road, his force had to work summer and winter, at altitudes ranging from 11,200 to 18,370 feet and in temperatures

sometimes as low as minus six degrees centigrade. They had to cope principally with problems created by cold and high altitude." Here, at Chang La, you will readily agree with the Task Force Commander that "nothing is impossible" for the boys of the Beacon Task Force. And, naturally, there are many stories of raw guts and heroism mingled with the dust of this road. Take the case of dozer-operator Chet Ram, who stuck with his machine when a whole hillside came down on it. After he was pulled out, the rocks had to be blasted off the machine to ease it free. Well, Chet Ram lived to tell us the tale. "It took 103 blasts to disintegrate that rock"—he said proudly—and then, as is his habit, and without an invitation, he broke into song. Even his song held all the romance of building a road in those terrifying parts. It went like this:

"A strange land this, where once even a locust couldn't get through—so close were the mountains, so difficult the terrain. But along came the Beacon boys—blasting their way through—and so, today—thousands of vehicles pass through easily."

ORDEAL ON THE INDUS

Chargeman Balm is another good example of the type of individual that has made the Beacon Task Force famous. "I was crossing seven tractors, at a point about 14,600 feet above sea-level, through the river," he said casually. "I put the first tractor into the river, and it travelled about 30 yards in about four feet of water, when suddenly it lurched into a ditch. In a moment we were up to our necks in water, which was flowing with terrific force and at sub-zero temperature. Fortunately, we had lashed ourselves before entering the river. I signalled my comrades on the opposite bank, for we had taken the precaution of winching ourselves with the rope earlier. The winch rope snapped—and there we were, stranded in the middle of an angry and freezing river! The engine was still running while we clung to the petrol-tank cap, silencer, and those parts of the machine that were still above water. And so we continued forward, lurching and stumbling over huge boulders hidden under the water. Forward and backwards, dipping and climbing—and then, at last, high ground! Drenched and numb we clambered up the bank to safety."

We stood with Colonel D'Silva in silence for sometime, looking at the hoary peaks helmeted in cloud. The road ahead was like a white thread on the shoulder of the mountain, a series of castellated dolomite crags tinted pink with mauve shadows. The solitude was oppressive—the silence ached in one's ears. Pointing to a white-washed slab below us on the mountain, the Colonel, as if speaking quietly to himself, recalled the names of heroes. Naik Chajju Ram who, on several occasions, climbed a rope over a hundred feet long in order to tackle dangerous "overhangs", on an almost vertical rock-face, knowing all the time, that the slightest slip would land him in the turbulent waters of the Indus. Jemadar Hari Har Dutt, who operated drilling machines on a vertical rock-face over 600 feet high,

by suspending himself with ropes from above—knowing all the time that a small slip meant certain death!

We passed many labour-camps on the roadside, peopled by Tibetan refugees who had fled their land because of Chinese persecution. They are a hard-working and cheery people. The greeting here changes from the Ladakhi "Jhule" (phonetically, "Joo Lay") to "Chhap-A-Na," which means roughly the same thing. But, wedged in between the laughter and the dancing and the singing and the working, lurks the sad memory of some departed member of this Task Force, or some incident when man came face to face with Death—and Death drew back. Chargeman Balm told me about another encounter with the freezing Indus, which went like this. "The river was frozen. We put in one machine and began moving. It reached the centre and then suddenly the ice cracked and the tractor fell in—only the exhaust and silencer sticking out. There were two operators. One made a jump for it and swam to the safety of the other bank."

"The other operator couldn't swim, and so hung there stranded! Suddenly, down the centre of the river a huge piece of ice came floating. They say a dying man will cling to any weed. Stanley Swamy grabbed this slender chance. As the ice floated within reach of him, he leapt on to it, not knowing where it would take him. As luck would have it, a second tractor was attempting a crossing two hundred yards down the river. It was also stuck—but above water level. The large block of floating ice with Stanley Swamy sprawled on it, collided with the tractor. He was pulled to safety and shortly afterwards the tractor reached the other bank. He was rushed to a tent, massaged near a Bokhari for an hour—and, happily, lived to tell the tale."

We asked Colonel D'Silva about those crucial days during the Chinese invasion. He told us that the Chinese invasion necessitated the construction during winter of eighty miles of motorable track between an altitude of 14,230 feet and 18,370 feet. The men accepted the challenge and completed the job in the fantastic period of two and a half months. The work was carried out in sub-zero temperatures which ranged between minus 20 degrees Centigrade and minus 16 degrees Centigrade. Sleep at night was impossible. Breathing became difficult. Bleeding from the ears and nose was a frequent occurrence—but work had to go on—because just over the next fold of mountains, could be heard the staccato stutter of sten-guns. Brave men were holding at bay a ruthless and treacherous enemy, which had posed as a friend. To build the road through Chang La the machines had to be brought by a second and shorter route along the re-entrants by the side of the hill—through the saddles and over steep gradients. This required real guts and courage.

THE NEW BREED

Ladakh is not a region for those alarmed by solitude. But this is a new

breed of men who live and work among these empty, desolate hills and long, freezing silences. It is a hilly wilderness, haunting and haunted. At night, only the thin air, searching across your face like cold blind fingers, keeps you company as you watch the moon rise over the empty hills. The silence aches in searching ears.

When daylight fades, the silence is intensified. A horizontal ray from a half-hidden sun burnishes a rock-face to a blinding copper sheen, which dims slowly in crimson, like smoking blood. A solitary spur stands out like a warning finger, sharp-edged against the afterglow, and then, night like a black velvet suffocation closes down, brooding, primeval—stirring queer tensions in the mind. Cold numbs the fingers—and freezes the feet. It gnaws through clothing to creep into the marrow of your bones. Feet sweat by day and freeze by night. Men peel off their socks and the soles of their feet with them.

Life is dangerous in Ladakh—and you are always conscious of the taunt of every horizon. Here, there is no room for mediocrity, and one has always to think big. The will must be granite and the spirit always willing. Here I found leadership, sacrifice, courage and the indomitable will to win—and nowhere on earth are the challenges, perils and possibilities for achievement greater, than in Ladakh, where the men of the Beacon Task Force blast and cut and sculpt their way across snow-capped mountains and treacherous gorges, keeping the life-line open for our men in the freezing bunkers facing the enemy over Chushul airstrip—a no man's land separating Indian and Chinese troops. They have blazed a trail through snow and dust and blizzard, manoeuvring their vehicles at dizzy heights—their wheels always quivering within inches of a terrible decision. We should remember these men, who built the highest road in the world, for the bravest men to fight on. We should remember them, along with those 114 Ahirs of the Kumaon Regiment, whose memory is enshrined on a modest memorial at Chushul. The men who fought to "the last round and the last man", at Rezang La on November 18, 1962. The slab says:—

*"How can a man die better
Than facing fearful odds
For the ashes of his fathers
And the temples of his Gods."*

This then, is "the land of cliffs and gorges dread—where the great yaks with trembling footsteps tread—Beneath the alp where frolic ibex play—and snowfields sweep across the perilous way."

The finest memorial to the boys of the Beacon Task Force is the road they have blasted from the greatest mountain range in the world...where, in the paralysing winters, skin sticks to metal, and cold steel can cause a burn like fire. The road is a living testimony to the indomitable spirit of man to conquer the highest mountains and to risk his life, if need be to die unsung and unremembered—for his country's freedom.

FEEDING THE PEOPLE

(An Analysis of India's Food and Population Problem)

BY A. RANGANATHAN

As early as the fifth century B.C., Herodotus remarked that "of all the nations we know, it is India which has the largest population." And Sir Julian Huxley has drawn a vivid picture of the Kumbha Mela of 1954 in his celebrated essay on 'Population and Human Fulfilment': "I shall never forget the spectacle of this enormous transitory human ant-heap, with its local condensation of crowds converging on to the temporary pontoon bridges over the Jumna to reach the sacred bathing-grounds. Crowds of this magnitude made a frightening and elemental impression; they seemed so impersonal and so uncontrollable. This impression was all too well justified by the shocking events of three days later, when the crowd got out of hand and trampled four hundred of its helpless individual members to death. However, I must return from this visible manifestation of quantity to the statistical reality behind it. I have said that the net annual increase of India's population is about five million. But the potential increase is far greater. India is still in the early expanding stage of the population cycle." However, a scientific study of the problem has hardly attracted the attention it deserves. Indeed, the problem of feeding the ever-increasing population of our country, which is difficult even in normal times, has been rendered particularly acute, owing to the uneasy transition of our economy from an essentially agrarian pattern with its accent on increased agricultural production during our First Five-Year Plan to the next stage of economic development with its emphasis on heavy industries. And the various difficulties necessitated by such a transition have not been fully grasped. It is a complex problem and has to be viewed in its several aspects—the historical back ground starting with the separation of Burma, the Bengal Famine, the partition of India and the serious demographic situation arising out of the great time-lag between a fall in mortality rate due to medical advances and the fertility of the Indian population making it increasingly difficult to maintain even the existing per capita income, which is one of the lowest in the world.

The food position in India, except for an occasional spell, has never been sound. Unfortunately, the seriousness of the problem was never realized as long as Burma remained a part of India. Due to the lack of any comprehensive production or consumption statistics, the following figures published by the Food and Agriculture Organisation of the United Nations can help us to draw valuable conclusions regarding our food position over a long stretch of forty years.

IMPORTS AND EXPORTS

Exports (+)		Imports (—) In million tons.	
Year	India	India excluding Burma	Burma
1900—1905	+3.16		
1905—1910	+2.84		
1910—1915	+4.22	+1.95	+2.27
1915—1920	+2.59	+0.40	+2.19
1920—1925	+2.48	—0.16	+2.64
1925—1930	+2.03	—0.77	+2.80
1930—1935	+1.85	—1.27	+3.12
1935—1940	+1.46	—1.39	+2.85

The only period when India had a surplus of 2.35 million tons was in the period 1910-20. During this period the increase in the population was only 0.9 per cent which was the lowest in the century due to the terrible influenza epidemic which accounted for nearly fourteen million deaths. This surplus was possible because there were not enough people to eat! The deficit started in the very next quinquennium (1920-25) and repeated itself successively. With the separation of Burma, the problem of food shortage became a stark reality. If the Government had taken stock of this grave situation and applied suitable measures, the Bengal Famine of 1943 which caused the deaths of more than one and a half million people (if we are to believe the official version) might not have occurred. And the contours of the Indian economy were altered as a result of partition. India was left with 82 per cent. of the population on a rough estimate, but could not get more than 68 per cent. of the total acreage of the fields, 65 per cent. of wheat land and only 48 million acres of irrigated area. However, the census populations of India and Pakistan have been combined in order to give a clear picture of the growth of population in the entire sub-continent.

POPULATION GROWTH

(Undivided India, excluding Jammu and Kashmir but including Pakistan)

Year	Population in millions	Growth Rate	Birth Rate	Death Rate	Natural increase
1891	276.9	...	48.9	41.3	7.6
1901	281.0	1.5	45.8	44.4	1.4
1911	299.8	6.7	49.2	42.6	6.6
1921	302.4	0.9	48.1	47.2	0.9
1931	334.5	10.6	46.4	36.3	10.1
1941	378.4	13.1	45.2	31.2	14.0
1951	430.8	13.9	39.9	27.4	12.5

The birth and death rates upto 1941 are as computed by Prof. Kingsley Davis; the birth rate for 1951 is as estimated by Coale and Hoover, whereas the death rate for 1951 is the official figure of the Indian Government. And the popula-

tion figure for 1948 is arrived at by deducting the census estimate of 6.6 millions due to inflation. It is well-known that if the problem is viewed from the purely statistical standpoint, the rate of natural increase should be slightly lower than the decennial growth rate. The death rate of 31.2 in 1941 is based on the assumption that the infant mortality rate (IMR) is 225 for 1,000 births. However, Coale and Hoover have calculated that if the IMR is 200, the birth rate should be 40.6 and death rate 28.4 in which case the natural increase is 12.2 and slightly below the growth rate. Again, the growth rate of 13.9 is much higher than the natural increase of 12.5, since displaced persons have not been included in this estimate.

The high incidence of infant mortality is the most tragic aspect of the Indian demographic scene. And infant mortality may be classified into two categories, namely, those dying within one month (neo-natal mortality) and those surviving the first category are obviously due to pre-natal and natal influences. The second category comprises of those who are not able to survive owing to post-natal factors arising from epidemics, diseases of the stomach, respiratory disorders and faulty feeding. And in addition to these factors, Dr. S. Chandrasekhar* has stated that the enormous wastage of infant life could also be attributed to "meddlesome midwifery of the 'dai' (illiterate Indian midwife) and poor mothercraft." In his paper on "Infant Mortality in India 1901-1951", (contributed to the proceedings of the World Population Conference), Dr. S. Chandrasekhar has calculated that between 1921 and 1939, the IMR in the first category had declined by 14 per cent. whereas the second category had declined by about 25 per cent. Again, it has been computed that if 45 per cent. of infant deaths constitute the first category, 80 among the first category and 103 from among the second category would make a total of 183 per 1,000 live births according to 1941-50 life table. And it has been further calculated that if the IMR among the first and second categories would decline by 40 and 60 per cent. respectively, the decline in the general IMR during the 25 years ending 1976 would be of the order of 50 per cent.

The cause of death is the most difficult problem in Indian demography. As Dr. Chandrasekhar dryly remarked, the term 'fever' in Indian mortality returns is an omnibus expression concealing within its fold most of the known diseases of man. The following table gives us an idea of the morbidity statistics for the year 1950. The annual death rate caused by malaria is 5 per thousand inhabitants, which is nearly thrice the rate for plague, small pox and cholera combined. The death rate caused by tuberculosis is perhaps second only to that of malaria. Typhoid (Sir John Megaw has stated in his 'Public Health—The Great Diseases of India' that most Indian infants suffer from the disease and so acquire an immunity which often lasts throughout life) has a considerable impact on the Indian death rate, not to speak of diseases like Beriberi.

*Dr. S. Chandrasekhar is the distinguished Indian demographer, who ought not to be confused with Prof. S. Chandrasekhar, the distinguished astrophysicist who works at the Yerkes Observatory, Chicago.

MORBIDITY IN 1950

<i>Deaths per 1,000 of population</i>	<i>Cholera</i>	<i>Small-pox</i>	<i>Fever</i>	<i>Dysentery & Diarrhoea</i>	<i>Respiratory Diseases</i>	<i>Injuries</i>	<i>All other causes</i>
Percentage of Total	0.4 1.8	0.2 0.9	13.0 58.1	0.1 0.5	0.9 4.1	1.8 8.1	10.6 26.5

While there has been a sharp fall in mortality (per thousand) from 25.9 in 1951-56 to 21.6 in 1956-61, the birth rate has been declining slowly from 41.7 in 1951-56 to 40.7 in 1956-61, according to the Indian Central Statistical Organisation's estimate. Again, the death rate is expected to drop to 12.6 by 1971-76, whereas the birth rate is expected to decline further to 27.3 in 1971-76. It is clear, therefore, that while the birth rate is declining gradually, there has been a steep decline in the death rate. This trend is even more discernible during the 'fifties than in the preceding decades. In his brilliant monograph on 'The Population of India and Pakistan', Prof. Kingsley Davis has argued that the Indian demographic situation has gone out of balance as a result of the absence of a public or a private policy of birth limitation to accompany the improvement in the rate of mortality. Actually the First Five-Year Plan draft stated that "under present conditions, an increase in manpower does not strengthen the economy, but in fact weakens it." The sharp fall in mortality rate is due to the various health schemes sponsored by the Government. Unfortunately, it is not accompanied by what may be termed as the modern fertility rate. This is a phenomenon peculiar to underdeveloped countries. In the words of A. Sauvy, the noted French economist, in terms of annual rates "the co-existence of mortality rate below 1.5 per cent. and a birth rate over 4 per cent. is no longer an exception. Now the mortality rate for the Western countries at the outbreak of World War I was 1.5 per cent.; thus many underdeveloped countries have the fertility of European countries in 1750 with the year 1900 mortality rate. A time-lag of at least a century and a half."

POPULATION GROWTH

(Adjusted to the present area of the Indian Republic)

<i>Census year</i>	<i>Population Millions</i>	<i>Increase or Decrease over the previous Decade</i>	<i>Percentage Increase or Decrease</i>
1901	235.50	...	— 0.2
1911	249.05	13.55	5.8
1921	248.18	— 0.87	— 0.4
1931	275.52	27.34	11.0
1941	314.88	39.36	14.1
1951	356.83	41.95	13.5

The above table records the growth of the Indian population since the beginning of the century.

The census figure for 1951, however does not include the population of Jammu and Kashmir which has been estimated in 1951 at 4.41 millions. The former Census Commissioner for India, Mr. R.A. Gopalaswamy has calculated that at the rate of growth during 1921-51, the population will reach a figure of 410 millions in 1961, 460 millions in 1971 and 520 millions in 1981. According to Mr. Gopalaswamy's analysis, the limitations of food production will virtually set the limit of the population at 450 millions, the D-day taking place in 1969. Mr. Gopalaswamy has calculated that (in addition to the annual production of 70 million tons of food) an extra 24 million tons a year was the most that could be produced in the foreseeable future (making use of new irrigation schemes, more efficient farming, an extension of the crop area by means of double-cropping and the cultivation of waste-lands) which would be enough to feed 450 million people but no more. And he warned that if this number is exceeded, the food supply might break down and result in "famine and epidemic diseases on the scale which prevailed in the last decade of the nineteenth century". But in the light of the latest demographic trends (the rate of growth of the Indian population during the past ten years is fast approaching 2.2 per cent.), it is perfectly obvious that Mr. Gopalaswamy has drawn an exceedingly optimistic conclusion! Taking the 1951 Census population as the base, Mr. Gopalaswamy had made two projections of India's population. In his first projection, he had assumed that the population will grow at the rate of 1.2 per cent. per annum, and in his second projection, he had considered the probability of India's population growing at the rate of 1.34 per cent. per annum.

Prof. Kingsley Davis had made three projections for India's population growth. In his first projection, he has assumed that the rate of growth of the Indian population will be 1.2 (which was the observed rate of increase for the period 1921-41 in the entire subcontinent). Prof. Davis's second projection was based on the assumption that the Indian population will grow at the rate of 0.6 per cent. per year (the observed rate for seven decades 1871-1941). And in the final projection, Prof. Davis had arrived at an estimate which is mid-way between the two projections by extrapolating a logistic curve fitted to the corrected population figures of India for the period 1871 to 1941, assuming 700 million as the highest and 245 million as the lowest population.

The real demographic situation of India became apparent in the wake of a recent epoch-making publication by Coale and Hoover entitled 'Population Growth and Economic Development in Low Income Countries' (Princeton: 1958). Assuming that the infant mortality rate is 200, Coale and Hoover have arrived at a "high" projection of 422 millions in 1961, 524 millions in 1971 and 588 millions in 1976. And based on the fact that the final calculation of the recent 1961 census

gives us a population figure of 439.24 millions, their "high" projection of 524 millions in 1971 will be nearer the mark than the "medium" projection of 517 millions in 1971. The Population Division of the United Nations, in 'The Future Growth of World Population', (United Nations, Department of Social Affairs, 1958), has estimated on an approximate basis that during the period 1955-60, the annual rate of growth has been 1.9 per cent. While the accelerated rate of annual growth is alarming, it is even more staggering to reflect on the magnitude of the net annual increase. According to earlier estimates, the net addition for the 30 year period 1951-81 was shown at 163 million; but the actual figure is expected to range between 231 and 305 millions.

Various remedies have been proposed to solve the food and population problem in India—internal migration, emigration, development of agriculture, industrialisation and a population policy. Internal migration is not a solution in itself since it is connected with the bigger problem of industrialization. Emigration is certainly a tempting solution, but so far as India is concerned, it is more easily said than done. To cite an example, countries like Australia are in need of skilled labour whereas the problem of India is to find an outlet for her surplus agricultural labour. The problem cannot be solved even partly by international emigration, but must be solved within our geographical boundaries. It is well to remember in this connection that Prof. Nurkse drew attention to the saving potential in rural underdevelopment as an instrument of capital formation. The idea is to take the surplus labour off the land and set it to work on projects ranging from railways to factories. This would contribute to an induced process of economic growth which will progressively lessen the burden on an economy subject to a steady increase in the rate of growth of our population as well as lay the foundations of a gradual process which could transfer a good number of the people of the primary sector into the secondary and tertiary sectors.

While agricultural investment constituted nearly thirty-three per cent. of the total outlay in the First Five-Year Plan, it constitutes only 21 per cent. of the total outlay in the Second Plan. However, the record output of 75 million tons of food (although it falls short of the Second Plan target of 80 million tons) and the import of 17 million tons of foodgrains from the U.S.A. against rupee payment are some of the more reassuring aspects of the Second Plan. But the proposed investment of Rs. 2,000 crores in agriculture and allied schemes during the Third Plan could perhaps be increased since the aim of the Indian Government is to implement its agricultural scheme for reaching a target of 110 million tons of food production as well as to hold the price line in order to contain inflation during the Third Plan.

It is wrong to assume that the process of economic development, unaccompanied by any appreciable fall in the birth rate would contribute towards raising the standard of living. And it is well to remember that the cities of India have not registered a sharp fall in the birth rate, as indicated by the rural-urban fertility

differentials in our demographic pattern. As a writer put it in a homely way, the Indian situation can be likened to the small boy who imagines that he is "developing" the supply of jam by raiding his mother's larder. Indeed, the increase in our population cancels out the economic progress generated by foreign capital. "The time has already come," wrote Keynes in his famous work 'The Economic Consequences of the Peace', "when each country needs a considered national policy about what size of population, whether larger or smaller than at present or the same is more expedient. And having settled this policy, we must take steps to carry it into operation." How are we to formulate a population policy for India? India cannot be said to be overpopulated at the moment, although her rate of growth in recent years is alarmingly high. Family Planning arises out of a higher standard of living and a conscious policy by the Government to introduce birth control through disseminating information on various methods of family planning and introducing cheap and hygienic methods of contraception by starting a number of clinics would help in creating an atmosphere in which the message of birth control could be understood by a majority of the people. There is need for real social education which covers not only the technical aspects of the problem, but the philosophy of birth control as well. Family Planning must be an automatic process and not an imposition from above; it cannot be passed by legislation, but its meaning must be clearly explained to the people so that the country becomes population-minded through social awareness of the problem. Commenting on the policy of the Indian Government, Sir Julian Huxley wrote: "It is encouraging that a great country like India should make population control part of its national policy. But it must be confessed that the effects are as yet small, and that to the outside observer the execution of the policy seems somewhat half-hearted."

The food and population problem is one of the major factors in history. And, it has been well remarked that "had the feeding arrangements of Bourbon France given satisfaction, the Bastille would probably never have been stormed or had the steppes of Central Asia been able to feed their rapidly breeding tribes, neither the Aryan nor Moghal invasions might have occurred." Of course, the modern Indians have no Bastille to storm, but nonetheless are confronted with the food and population problem. The food and population problem of India can be solved only through a spirit of cooperation between the Government and the people; the Government ought to increase the agricultural investment outlay during the Third Plan and initiate a well coordinated national policy of birth control through rapid measures. Indeed, Sir Julian Huxley has cogently argued, that in order "to qualify for aid and indeed for membership of the international development club, underdeveloped countries would have not only to pledge themselves to hard and intelligent work, but also to be willing to restrict their populations by initiating effective policies of birth control and family planning." And the future can be hopeful only if we realize that our current programme of economic development must be accompanied by an accelerated policy of birth control in order to avoid the economic consequences of the imminent 'population explosion'.

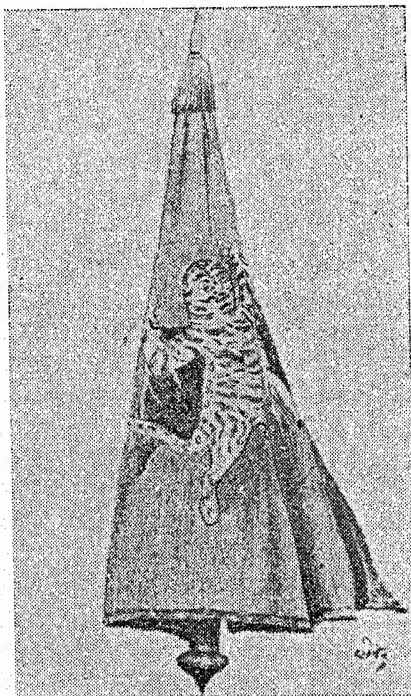
TRANS-HIMALAYAN CAMPAIGNS OF GENERAL ZORAWAR SINGH

BY MAJOR GOVERDHAN SINGH JAMWAL

INTRODUCTION

Zorawar, the legendary General of Maharaja Gulab Singh of Jammu and Kashmir, earned for himself the title of 'Little Napoleon of India' and has been described as the military genius of the nineteenth century by Cunningham. "During the long history of India, no Army from Hindustan had attacked Tibet. No Indian ruler had thought of conquering it and no Indian General accustomed to the heat of the plains had ever dared face the rigour of the Tibetan climate. Zorawar conceived the idea of conquering the Central Tibetan province for his master and prepared an expedition for that purpose."¹

These Trans-Himalayan Campaigns fought by General Zorawar Singh, over a century ago, have suddenly become important for us, for with the Chinese aggression we find a large portion of our Army deployed in those very areas. Even the lapse of this period has not changed some basic factors of warfare in these regions and the effects of terrain, altitude and climate remain very much the same. We can, therefore, still learn some useful lessons from the study of his campaigns. We shall first discuss the topography and then his campaigns.



"The Chinese flag, commonly known as the 'Mantalai Flag'; captured by 4th Battalion The Jammu and Kashmir Rifles under General Zorawar Singh in the battle of Mansarowar in Western Tibet in May 1841.

TOPOGRAPHY

THE plateau of Ladakh forms part of Himalayan table land. It is bounded on the North by Karakoram Mountains, in the East by Tibet, in the South Kish-twar, and Kashmir and on the West by Baltistan and Gilgit. Tibet is the highest

1. *The Founding of the Kashmir State* by K.M. Panikkar, p. 80.

country in the world followed by Ladakh with an average height of 12,000 feet above the sea level. The air is so rarefied that even breathing becomes difficult, particularly during the night. The temperature falls below zero even in summer. For miles there is no vegetation or human habitation. Communications—even today, 140 years hence—are extremely poor and difficult. During the winter, the streams are frozen, passes blocked and tracks covered by snow; storms and blizzards are common. There is no shelter or sufficient food even for the inhabitants of the area. At places there is no fuel or fodder for miles. The effects of such a terrain, climate, weather and altitude on movement, administration and operations are not difficult to imagine.

CONQUEST OF LADAKH

By the 15th century Ladakh had become an independent country and in 1834 it was being ruled by Namgyal. After the annexation of Kishtwar by Gulab Singh in 1823, Zorawar had been made the Governor of this newly-conquered province. He not only administered it well, but also prepared for his expedition to Ladakh and accordingly trained and acclimatized his troops. His force of 10,000 Dogras was composed of Infantry, Cavalry and Artillery with necessary administrative services, mostly forming an organic part of his basic units. As Kashmir was then under the Sikh Rulers of the Punjab, he could not use the traditional and less difficult route over the Zoji pass and, therefore, had to take more hazardous route over the Zaskar Range, crossing Bhot Kol pass, over 13,000 feet above the sea level, in July, 1834.

The first opposition was encountered on 16th August, 1834, at the head of the Suru valley where 5,000 Ladakhis had taken up strong positions on a hill. Zorawar succeeded in dislodging them after bitter fighting in which he combined the use of his infantry and cavalry in a mountainous terrain. While at Suru, he did not allow his troops to damage the crops and allowed the civil population to harvest them which won him their gratitude and cooperation. It was due to the far-sightedness of General Zorawar Singh, who was not only concerned with winning battles but establishing peace after the conquests, that he allowed the normal life of people to continue undisturbed. He knew too well the effects of losing a harvest in that deficit area. He, however, collected a tax of four Rupees per household which was paid willingly by the people. He also built a fort at Suru and left a detachment to guard his lines of communication.

After a halt of one month at Suru, Zorwar advanced on Leh. At Pashkyum, the Ladakhis were determined to prevent the Dogras crossing the river; the struggle was protracted in which the Ladakhis were defeated. They destroyed the bridge, but the Dogras managed to cross the river on inflated skins. The Ladakhi force withdrew to Sod and occupied previously prepared positions. After ten days of skirmish, the Dogras put in a dawn attack under the cover of a heavy battery fire and stormed the position. By the daybreak, the enemy surrendered and about 6,000 prisoners were taken. In the meantime, the Raja of Ladakh marched with 22,000 men and advanced to Lang-Karchu (Lang-Kartse). Here

the Dogras surprised the enemy and attacked them with swords. The Raja of Ladakh sued for peace and became a tributary of Maharaja Gulab Singh. Zorawar then returned to Jammu.

The consolidation of Ladakh, however, took another six years. In fact, the very next year, the ruler of Ladakh revolted and Zorawar had to march in the middle of winter to crush the revolt. It was, indeed, a great feat of military accomplishment to take an Army over 13,000 feet Zaskar Range in the middle of winter by covering 300 miles in under ten days, *i.e.*, 30 miles a day!

BALTISTAN CAMPAIGN

Baltistan then comprised of many small states of Skardu, Parkuta, Tolti, Khapalu, Shigar and Astore; Skardu being the Chief State. Zorawar Singh received a request for help from the eldest son of the ruler of Skardu, who had been deprived of his right of succession by his father. But the main problems facing Zorawar were supplies, manpower, ponies for his cavalry and guarding the long lines of communication. He solved the problems of manpower and ponies by enlisting the support of the Ladakhi King, who organised a Ladakhi Army and accompanied Zorawar on the campaign. This also solved the problem of guarding his communications and their maintenance. Now he wanted to defeat these States in detail. He, therefore, decided to attack Skardu first, the strongest of them. He moved along the River Indus from Leh and divided his force into two columns; one along the track via Chorbat pass and the remainder under his own command along the river. As usual, before moving forward, Zorawar used to consolidate the territory already conquered. He, therefore, consolidated, Kargil, Dras and Suru areas and also got some local reinforcements for his battle against the Skardu forces. After leaving small garrisons behind in each of these places, he moved along a narrow track down the Indus.

Apprehending the danger of Zorawar's advance, Raja Ahmed Shah of Skardu had deployed a large force numbering approximately 20,000 on both the routes. He was in a formidable position to block the entry of Zorawar into his State. Zorawar approached the River Indus from the south-west to cross on to the northern bank to attack the entrenched Skardu forces in Thamokhuni Thung near Marol but the river was effectively dominated by them. Here the river Indus passes through narrow gorges, where stupendous cliffs tower on one side of the narrow track and fall beneath to the raging torrent on the other side. There is no vegetation, not even a blade of grass to be seen there. In the meantime, his detached force moving over the Chorbatla was surrounded and attacked by Balti troops and suffered heavy casualties. Another view, however, is that this detached Dogra force was able to cross the pass and joined the main force of Zorawar short of Skardu.

By now winter had set in. Many soldiers died of pneumonia and frost-bite in the severe cold. Zorawar was forced to wait for over two weeks on the bank of the river in exposed positions, while the stocks of food were dwindling.

Men took shelter in the caves, but there was no hope of crossing the river and this fact alone demoralised his men. Zorawar, ever vigilant and undaunted, had ordered Colonel Baste Ram to carry out reconnaissance of the river to find a crossing. One night he found that the river had started freezing during the nights but only near the banks. With the help of the locals he got some wooden logs put across the river so that the two frozen banks were connected with each other and stopped the flowing ice. In no time these flowing pieces got stuck to the logs and froze the river from the middle also, over which he got his force across and surprised the enemy. Before assaulting the enemy entrenched on the higher ground, Zorawar had already despatched a small force during the night to attack him from the rear. This double surprise forced the enemy to fall back from a formidable position. The Dogras lost 25 killed and 15 wounded in the action (but suffered about 500 casualties due to frost-bite and loss of hands and feet). Zorawar pressed home his advantage and finally defeated the Skardu forces by his clever use of infantry and cavalry. This brilliant success shook the other rulers of Baltistan, who hastened to come to terms with Zorawar and accept the suzerainty of Maharaja Gulab Singh. Thereafter, it was only a matter of marching through the remaining States. Zorawar, though victorious, was magnanimous towards the vanquished and treated them with consideration. This statesmanship not only saved him the manpower to garrison these newly-won States, but also in turn, won their support for his Lhasa Campaign.

LHASA CAMPAIGN

By now, Zorawar had sufficient experience of campaigning in the Trans-Himalayan regions and he prepared his force for his Lhasa Campaign in the light of this experience. Realising the effects of terrain and climate and the difficulties of maintenance, he decided to keep his force small but mobile. His force of 5,000 mainly consisted of Ladakhis and Baltis stiffened by Dogras. His cavalry was provided with horses and ponies collected from Ladakh and Baltistan. Zorawar appreciated that, as soon as he entered the Tibetan territory, the Tibetans would come out to give him a fight. Banking upon his superior leadership and mobility, he hoped to win the major battles before the onset of winter. And even if he had to live in Tibet during the winter, he would be able to do so as he thought that by then he would have defeated the Tibetan forces. Nevertheless, he made his force self-contained for the entire winter.

Zorawar left Leh in the month of May 1841 and advanced into Tibet in two columns; one under Mian Rai Singh via Rashpowanle and the other via Changle Watanchi under his own command. Both these columns met just outside Rudok and attacked it. Rudok fort was garrisoned by about three hundred Chinese. Colonel Baste Ram was given the task of reducing this fort. During the battle, the Chinese Commander of the fort was killed and the remaining garrison, being demoralised, soon surrendered. The Dogras replaced the garrison by their own troops and moved forward on to Gartok.

From Rudok there are two routes leading towards Gartok; one along the River Indus and the other—more direct but difficult—via Lubra. Zorawar

TRANS—HIMALAYAN CAMPAIGNS OF GENERAL ZORAWAR SINGH



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despatched Colonel Baste Ram with small force *via* Tashigong and himself moved with the main force *via* Lubra. Colonel Baste Ram captured Tashigong after a light resistance and then joined up with the main force at Rudok. Rudok has been described "as a bare and barren place without any wood for fuel or grass for fodder." People used to live in tents made of Yak hair and there were no permanent shelters or houses. It is said, however, that there was one dilapidated house which had been constructed by the Lhasa Government for their officers. The Dogras got this house repaired for using it as a store house and left some men to guard it.

THE BATTLE OF MANSAROWAR

Lake Mansarowar has religious sanctity for Hindus and from time immemorial it has come down as a place for pilgrimage where only 'Yogis' used to go. This place has found a mention in Hindu scriptures and old religious books. It is said that centuries ago an Indian Raja by the name of Mandhata hoisted his flag on this lake which was then known as 'Tsomapham.' No organised force had ever reached this far from the plains of India until General Zorawar Singh's Campaign in May 1841.

After leaving Rudok, Zorawar entered the district of Mansarowar, where the people accepted his suzerainty without giving a fight. Now they reached an area where the path to the Lake crosses over three big nullahs flowing out of 22,000 feet high Mount Kailash into the River Sutlej. This place is known as Tokoporal and the Lake is only one day's march from here. Zorawar decided to halt there for the night. After establishing the camp on the bank of Shartokopo nullah, he conferred with his leaders regarding the next day's move and pilgrimage to the sacred Lake. He is said to have told them, "We are happy to be here, but, while flying the Flag of the Jammu Durbar over the Sacred Lake and Mount Kailash, we must take care that we do not cause blood to be shed." One Ladakhi Chief is said to have told Zorawar that the Lake was still one day's march from there and before they could reach it they would have to settle score with the Lhasa force stationed on the border of Purang en route. Zorawar hoped, however, that if this force did not intervene, they might get away by reaching the sacred Lake without bloodshed. Zorawar started issuing detailed orders for the next day's move and the conference is said to have ended in the evening mist. It was about 30th May, 1841, the weather was fine and pleasant. Morale was high and everyone was full of confidence to accomplish the long-cherished desire of reaching the sacred places, and thus they slumbered.

In the middle of the night, the Chinese forces stationed on the border of Purang, surprised the Dogras and attacked them with all the strength they could muster. The Dogra force was caught unawares and could not put up a concerted fight against the well-planned and co-ordinated night attack by the Chinese. It was pitch-dark and the visibility almost nil. There was so much confusion in the beginning that the Dogras, Ladakhis and Baltis started fighting each other. It was in this kind of situation that Zorawar was always at his best. He remained unperturbed and, coming out of his tent, immediately issued brief but succinct

orders in a loud voice: "Any man belonging to my force will shout 'Jammu Raj Ki Jai' to be answered by 'Sitla Mata Ki Jai' and slay the man who does not answer back!" Besides showing his presence of mind at the hour of crisis, his brief, yet most effective, order achieved what appeared to be the impossible. It not only emboldened his men but also enabled them to recognise each other, which is so essential during a hand-to-hand fight in the dark. Now the Chinese found it difficult to match the Dogras and thus the scales were turned in favour of the Dogras. A fierce battle, however, continued for about four hours till the daybreak, when the Chinese started fleeing. The Dogras saw the Chinese carrying a standard and captured it. Thus came the renowned 'Mantalai' flag, bearing the peculiar device of a dragon, into the possession of 4th Battalion The Jammu and Kashmir Rifles, which then formed part of General Zorawar Singh's Force. The 'Mantalai' is synonymous with Mansarowar; 'Man' being the original prefix and 'Talai' meaning a 'Sarowar' or lake in Dogri.

Thereafter, it was only a matter of moving to the Lake the next day and hoisting their flag on Mansarowar, which the Dogras did. By the successful engagement at Mantalai, Zorawar annexed the area of Purang without actually invading it. This battle was the highest ever fought by plainsmen, but not under the adverse climatic conditions which were to follow.

THE BATTLE OF TOYO

Zorawar followed the Chinese and finally defeated them at Kartung and Tiflakhar (Taklagor). Darpurn Shat, the Chinese Commander, fled towards Lhasa. Zorawar constructed a fort on the left bank of River Ghagra and stationed Colonel Baste Ram there with a small detachment. The battle of Purang was the high water mark of Zorawar's conquests. The whole of Western Tibet was under the Jammu Durbar and its frontiers extended upto Nepal and Kumaon. It was at this time that the Maharaja of Nepal despatched a contingent of 120 men to Wazir Zorawar Singh as a gesture of goodwill, wishing him for continued friendship, as Jammu and Nepal had now become neighbours. Even the British Government got alarmed by the rapid advance of Zorawar into the Western Tibet and feared that if he continued further he may conquer Lhasa and, perhaps, upset the British plans. Mr. Cunningham sent a special emissary to Zorawar and advised him through Colonel Baste Ram to call off his expedition to Lhasa as the winter was about to set in and he had come far away from his base at Leh and had yet to go a long way to Lhasa. He was also told that his provisions may not be enough to continue and the Tibetans were only waiting for such an opportunity. Under the circumstances he was advised to return to Leh that winter and start from Leh early in next Spring. Since Zorawar knew that his master had obtained the consent of the British for his campaigns, he accepted the advice of the British in good faith. Had he continued, there is no doubt that he would have defeated the Lhasa troops and occupied Lhasa before the winter. However, it was not to be. After having been deflected from his main aim by a strange hand of destiny cast through the British diplomacy, Zorawar contented with his achievements and went for a pilgrimage to various religious

monasteries, the Sacred Lake of Mansarowar and Mount Kailash. He decided to return to Leh after stationing garrisons at important places and forts.

The Chinese, on the other hand, got a respite and started preparing for an attack during the winter; Zorawar, over-confident on account of his successes, was unaware of this move. When he reached Tirathpuri he got the news of approaching Lhasa forces. By now, the winter was setting in and Zorawar was in strange predicament. Returning to Leh in face of the enemy would have been demoralising for his men while staying there was no less dangerous. He decided to settle the issue once for all and halted at Tirathpuri at an altitude of 15,000 feet above the sea level and assembled his force numbering under 5,000 with the exception of Colonel Baste Ram who remained at Taklakot.

It was now December and the bitter cold, frost and pneumonia took a heavy toll of his men and horses. His cavalry was reduced to nothing. Cunningham describes the condition of his Army very vividly: "The Indian soldiers of Zorawar Singh fought under very great disadvantages. The battlefield was upwards of 15,000 feet above the sea and the time mid-winter, when even during the day the temperature never rises above the freezing point and the intense cold of night can only be borne by people well covered with sheep skins and surrounded by fires. For several nights the Indian troops had been exposed to all the bitternesses of climate. Many had lost the use of their fingers and toes; and all were more or less frost-bitten...on the last fatal day not one-half of the men could handle arms."²

Such was the condition of Zorawar Singh's Army when the Tibetans finally advanced towards him. Zorawar despatched a Balti contingent under Ghulan Khan to stop the enemy, but this covering force was defeated. The fresh Tibetan force was three times superior in number to Zorawar's exhausted men. Nevertheless, illustrating the Napoleonic maxim that attack is the best form of defence, Zorawar struck first on 9th December, 1841, at Toyo. The battle raged for three days and Zorawar's Army gave a good account of itself and had nearly won the battle when Zorawar himself was wounded by a bullet. Though wounded, he continued fighting till a Tibetan pierced a lance through him from the rear and thus ended the life of a great general on the battlefield on 12 December, 1841. With his death, his Army suffered heavily and of the 5,000 only 1,000 escaped.

To complete the story, Maharaja Gulab Singh sent a fresh Army under Wazir Ratanu and Diwan Hari Chand the next year to avenge this defeat. The Chinese entrenched themselves at Drangtse (Tangtse). Finding them occupying positions which were difficult to carry by assault, the Dogras dammed up a river and flooded their entrenchments and forced them out of their strong positions. A fierce battle took place in which the Chinese and Tibetan forces were defeated. Their General was captured and killed on the spot. On this, the Lhasa Government agreed to seek peace, which resulted into a peace treaty of 1842.

PERSONALITY AND LEADERSHIP

Although Zorawar Singh was born in a poor Dogra Rajput family of

2. Cunningham, *Ladak*, p. 353.

Himachal Pradesh, his destiny took him to Jammu where he was enroled as a sepoy in Riasi Fort by Maharaja Gulab Singh. He distinguished himself in many campaigns and particularly excelled as an administrator in all capacities up the ladder. As a result, he was made Governor of Kishtwar and Maharaja Gulab Singh conferred upon him the title of Wazir, a title reserved for the selected few for their loyalty and devotion to duty.

He was an unassuming and simple man but a strict disciplinarian. He was uneducated but intelligent and kind yet firm. He led a very simple life and lived on his meagre pay and never made money from his campaigns. He deposited each and every pie obtained during his campaigns in the State Treasury. He never sent any despatches or information about his conquests except the revenue and tributes, and the Maharaja had to discover from them what new country his General had conquered. He was so honest that once when the Maharaja asked him to demand something for himself he demanded only two things: food to eat and the clothes used by the Maharaja himself to wear and nothing else. He never accepted a gift nor allowed his soldiers to accept one. Looting and pillaging were unknown to his soldiers, for his punishments were exemplary. His soldiers loved him, for he would go into the minutest details of administration and their welfare. Although his name is still associated with terror in the areas he conquered and is often used by mothers to quieten their babies, yet it is a fact that he never harassed the public, neither converted them nor destroyed their religious places and institutions. After the battle was over, he was considerate towards his opponent and he administered conquered areas through local rulers. His use of local resources in men and horses shows his administrative ability. There were no oxygen bottles, Parka coats or special cold-weather equipment in those days. It was sheer training, high morale and the inspiring leadership of Zorawar that made his men follow him over the highest passes in the world and fight under most rigorous conditions of climate and terrain without any hope of reward.

Zorawar stands out as a leader of men, particularly under trying and difficult conditions which distinguish him as a military general from others. He always believed in personal example and was often found amongst the leading troops in the battle. In fact, he was always present wherever his personal presence was required. He was not only a soldier, but also an astute statesman. He is rightly called a 'Soldier Statesman'. He undermined his enemy's will to fight by diplomatic moves. In this regard, he is said to be a staunch follower of Kautilya's principles as enunciated in *Chanakya Neeti*, the essentials of which, it is understood, he had grasped too well despite being uneducated.

"Besides being an intrepid commander, he was also gifted with considerable political ability. His settlement of the newly-conquered provinces bears witness to this. To have marched an army not once or twice, but six times over the snow-clad ranges of Ladakh and Baltistan, 15,000 feet above sea level, where the air is so rarefied that people from the plains can hardly live with comfort, is no mean achievement. To have conquered that country after successive campaigns

and reduced it to a peaceful province is an exploit for which there is no parallel in Indian History. His greatness will shine through the pages of Indian History as that of a great and noble warrior of whose achievements India could be justly proud".³

LESSONS

The study of these campaigns brings out many useful lessons. Taking the accepted yardstick of principles of war, we find Zorawar adhering to the main principles of war scrupulously. His crossing of the Zaskar Range in the middle of the winter in 1835 to surprise the Ladakhis and his spirited offensive orders and the coining of a slogan at the spur of the moment in the battle of Mansarowar turned the defeat into victory. The mere fact that a person born and brought up in the warm climate dared to conquer Ladakh, Baltistan and Tibet proves his offensive spirit.

Mobility was another principle which he adhered to against heavy odds. His infantry moved light yet self contained. He used local ponies which were more mobile in that terrain. He extracted mobility out of his infantry by making them march over long and difficult terrain and often from unexpected direction which gave him the element of surprise. During his march in the middle of winter from Kishtwar to Leh to crush the insurrection led by the Gyalpo, his force covered a distance of 300 miles in ten days over snow-covered passes! In his battle against the Skardu forces, he crossed the river at night and attacked the enemy entrenched on a hill-top from the rear.

His men used leather trousers and Jackets made of sheepskins in winter. The soldiers carried country-made rifles with gun-powder, in addition to swords, lances and shields. He ensured that a continuous supply of gun-powder and rations reached him uninterrupted from a base, sometimes as many as 20 miles a day? Grains and grinding mills (*Chakis*) were carried by the men. These grinding mills could be used to grind any type of grain into *atta*. During his Tibetan campaign, he moved self-contained. In other words, good administration was one of Zorawar's strong points.

High morale is evident from the study of his personality and leadership. Economy of force and resources were ensured by utilising the local resources in men and ponies to the maximum. Security was ensured by winning the local rulers and by leaving small garrisons along the lines of communications during the campaigns of Ladakh and Baltistan respectively. During this Tibetan campaign a small detachment under Colonel Baste Ram was stationed on the flank while a covering force was pushed ahead to protect the camp from the front.

Apart from studying his generalship in the light of the principles of war, the study of his campaigns brings out clearly that no terrain, weather or climate are entirely unfit for operations, but troops require acclimatization, hard training, sound administration, high morale and effective leadership. Zorawar acclimatized

3. *The Founding of the Kashmir State* by K.M. Panikkar, p. 82.

and trained his troops at Kishtwar at a height of 5,500 feet for his Ladakh campaign. Similarly, he used Ladakhis for his Baltistan campaign and both Ladakhis and Baltis for his Tibetan campaign. It also brings out that long distances and vast space requires special consideration. Tibetans trades space for time and ultimately struck when climate and weather were in their favour. Objectives, in future, will have to be fixed in relation to the capabilities of own forces *vis-a-vis* those of the enemy. Full use of local resources, in men and ponies still holds good, and, above all, the personal courage of the leaders and high morale of men still remain and shall remain the most important factors of winning wars under such conditions of warfare.

A note on the Army of General Zorawar Singh giving some details of his organisation methods of intelligence and administration is given at the end of this article.

CONCLUSION

The study of his campaigns brings out clearly the necessity of acclimatization, sound administration, more reliance and full use of local resources, high morale and determined leadership. Also it brings out that space and the effects of climate are very important factors in the ultimate results of the campaign.

A NOTE ON GENERAL ZORAWAR SINGH'S ARMY ORGANISATION

General: General Zorawar Singh's Army was organised on the lines of the Lahore Durbar Army, suitably modified to meet the requirements of mountainous terrain. The broad bases of his organisation were mobility and self-reliance in all types of terrain particularly when operating independently, away from the bases. The organisation of his infantry, artillery and cavalry is discussed in the succeeding paragraphs:—

Infantry: Infantry was the main arm and considered as a 'Corps d'elite'. An infantry battalion had eight companies and was commanded by a Kumedan (equivalent to a Lieut.-Colonel), assisted by an Assistant Kumedan. Bakshi performed the duties of the Adjutant. A company consisted of one hundred men and was commanded by a Subedar. It was divided into two platoons of 50 men, each commanded by a Jemadar. A platoon had five sections of ten men, each commanded by a Havildar.

A infantry battalion had the following specialists and administrative staff on the establishment:—

- (a) A Pandit.
- (b) A Hakim/Vaid.
- (c) Barbers (as surgeons to tend the wounds).

- (d) Munshi (Clerk).
- (e) Musadi (Accountant).
- (f) Artificers, Blacksmiths, Carpenters and Masons.
- (g) Cooks, Masalchis and Water Carriers.
- (h) Mates and Coolies.
- (j) Dak Orderly.
- (k) Transport personnel to handle organic animal transport of the battalion.

Artillery: Each artillery regiment was organised on the lines of infantry battalion and had ten pieces of guns. Each gun was under a Jemadar and had a crew of eight. The average range of these guns was between 800, and 1,200 yards. These guns were carried on mules or ponies and could also be carried by men. Each gun could be broken into four pieces of 200 lbs. each.

Cavalry: The cavalry units were organised on the same pattern as infantry battalions. Each Sowar provided his own horse and carried a lance, sword and a match-lock. The mobility was achieved by making use of local ponies which were quick and could easily operate at high altitudes. These ponies were versatile and could live on a frugal forage off the land.

Recruitment: The men were recruited from the martial classes of Jammu, Kangra, Chamba, Kishtwar and Riasi. He weeded out the unfit scrupulously. Only those were selected who could climb a steep hill with a maund of load on their back and handle their weapons effectively at the end of the climb. In selection of his officers he was absolutely secular and his commanders included both Hindus and Muslims.

METHODS OF INTELLIGENCE

General: It is said about Zorawar Singh that he never embarked on a campaign unless he had true picture about the enemy; his strength, dispositions, fighting ability and capacity. In this respect he was a staunch follower of *Kautilya's* maxims as enunciated in the *Arthshastra*. He always tried to alienate the friends of his enemy promising them due consideration, and these promises were invariably honoured. Some of his methods of gaining intelligence are given in the succeeding paragraphs.

Collection of Information: It is said that for years before his Ladakh campaign he had been meeting people who had been to Ladakh, such as traders, travellers and others, and collected all the relevant information about the routes, forts, accommodation, food, people and their characteristics.

Use of Locals: The locals were used by him both for battle and strategic intelligence. He always amply rewarded such local agents who gave him useful information about his enemy and helped his forces as guides.

Use of Cavalry: He also made use of his cavalry for battle intelligence, that is, for patrolling and flank protection. It was more for denying rather than gaining information that he used his cavalry in the mountainous terrain.

Strategic Intelligence: Zorawar succeeded in dividing the enemy or alienating them, and, having defeated them, he treated them with consideration.

In a nutshell, he used locals as fifth-columnists, agents and guides; offered them handsome rewards and kept his promises. He alienated his enemy and created possibilities of defeating them in detail and after defeating them made friends with them and used them to further his own aims.

ADMINISTRATION

General: Zorawar Singh always ensured full administrative backing for his campaigns, which meant fighting two enemies, the second being the elements of nature—altitude, climate and terrain. He made the maximum use of local resources in manpower, transport and even food. A few of the most interesting details of his administrative set-up which enabled him to operate on the roof of the world are given in the succeeding paragraphs.

Accommodation: He always aimed at campaigning during the favourable season but soon learnt that campaigns in such a terrain took longer and invariably exceeded the time allotted, which could result in a disaster. He, therefore, secured successive bases to fall back upon and went on constructing forts on his lines of communication. He never destroyed any houses and villages during his attacks. He repaired old houses and monasteries in the Western Tibet and constructed many forts including the one at Taklakot.

Tentage: Each infantry battalion had one hundred and fifty tents as a part of its unit equipment. Tents were made of yak hair.

Transport: Basically every man carried one maund of load on his back, normally in a skin which could be put to various uses like making rafts or swimming across a water obstacle. Local labour and local ponies were used for carrying loads. The whole route was divided into convenient stages on which the supplies moved regularly. Commissariat Department was responsible for providing labourers and ponies at each stage. His artillery alone required upto one thousand ponies/yaks for the carriage of guns and ammunition. He made the fullest use of local ponies, which were easy to maintain and could operate almost everywhere.

Supplies: Men carried their rations on their back. Normally their rations were dry, fried barley (Sattu), gram and gur, which could sustain them for a longer period and could be used as emergency ration also.

They carried grinding mills to grind the grain, any type of grain that was available, including 'girm' which is grown in Ladakh. Normally they carried two such mills in a platoon. There is no mention of alcohol being taken or used by his men during these campaigns, perhaps they managed without it.

Weapons, Ammunition and Explosives: Each man carried his locally-manufactured matchlock or flint-lock or percussion-cap type of guns which were fired by a coil of smouldering rope. In addition, men carried swords and shields.

His artillery units had locally made mountain guns weighing approximately 800 lbs., which could be stripped into four pieces and carried by 4 ponies/yaks. Even a team of 16 men could handle a stripped gun for a considerable distance. He got some guns manufactured by local artificers at Kishtwar with the iron obtained from Riasi. Two of his guns are still lying in the Leh fort in Ladakh.

Most of the ammunition for his infantry weapons and guns was manufactured locally at Kishtwar. Each infantry man carried his own grape shot at the scale of ten lbs. per weapon. Percussion-caps were manufactured locally and issued at the scale of fifty per weapon.

Sufficient explosives were manufactured for his guns and for the demolitions. Some explosive experts accompanied his force to manufacture explosive as the materials required for it were known to be available in Ladakh. Explosives were used for clearing roads, tunnelling and mining enemy's forts.

Clothing: Men were clothed adequately against the vagaries of the cold climate. Men wore woollen 'Pyjamas' (tight trousers), sheepskin jackets and turbans. For footwear, they had the locally-made shoe, 'Jora', and, for wearing on snow, they had the Ladakhi shoe, 'Pabhu'. There was an adequate supply of best available blankets and quilts. As the force remained away for a considerable time, adequate supplies were ensured to replace worn-out clothing.

Medical: Each unit had a Vaid or Hakim in charge of the medical set-up. In addition, there were a few barbers who acted as surgeons for performing minor surgical operation. The v aids and Hakims were advanced money from the state to purchase all the necessary medicines.

Welfare: Spiritual guidance was considered very important for troops operating under severe conditions of climate and terrain. Zorawar Singh was himself very religious-minded and he insisted on each soldier following his own religious teaching, which gave one contentment. For this he had really capable pandits, one in each unit.

For their physical needs, manly games and sports were arranged. Hunting expeditions and competitions were common. Zorawar Singh was a great disciplinarian and he never allowed his men to enjoy the fruits of conquests; no women were touched, no property was looted and no form of corruption was ever tolerated. It was only due to his personal example, in every respect, that he was able to command unflinching loyalty from everyone under this command. He got their best because he gave his very best.

ANNUAL CONFIDENTIAL REPORTS

BY LIEUT.-COLONEL J. ROBELLO

INTRODUCTION

In his *Republic*, Plato wrote, "In the first place, no two persons are born exactly alike, but each differs from each in natural endowments, one being suited for one occupation and another for another". Plato was concerned with much the same problem as we are today, that of evaluating persons with respect to occupations. Thinking along these lines has gone on from an early start in the nineteenth century to the present day when every large organisation has a well-defined system of merit rating for its employees, particularly its officers or executives. In an army with a large officer corps such a system is essential. It ensures that at all times an up-to-date and accurate picture is available of the abilities and characteristics of all the officers, enabling their correct placement and promotion. It is an excellent motivational device. To the research worker, it provides an aid for the review of training and selection techniques. The realisation of the importance of this aspect of management has resulted in a continuous effort in all modern armies to improve upon the system in use. In the Indian Army today, there is a need for the evolution of a more accurate and effective system of officer evaluation *i.e.*, annual confidential reporting.

PRESENT SYSTEM

THE present system is one of reporting on the officer's qualities by the immediate superior of the officer reported on. The descriptive portion of the report is shown to the subject while the executive recommendations are not. The report itself is processed through every superior commander and technical superior, each of whom appends his comments before it reaches the Military Secretary's Branch at Army Headquarters, which is the repository of all the officer's records. Here it is filed in the officer's dossier. When any selection is to be made in which the officer is involved the dossier is analysed by those of his brother officers who happen to be posted in the Military Secretary's Branch at the time.

That this system has its defects is evident and what is even more self-evident is that the practice of the system has developed greater shortcomings. An analysis of the imperfections in the system as such is easier, while a scrutiny of the practice has perforce to be abstract. Suffice it to say that the numerous letters that have been issued detailing instructions on the manner of reporting and exhorting a more objective approach lay a pointer to the need for an overhaul.

The main drawback in the scheme is that the appraisal is largely subjective and is based on an assessment of certain abstract qualities which can really be tested in war. The analysis of the report at Army Headquarters is done by

Service officers who have no special qualifications for the job. In fact the regimental officer who mans the Military Secretary's Branch is at the stage of his career when he is traditionalistic in his outlook and to some extent rigid in his approach to any problem. The initiating officer is not assisted by any yardsticks, with the result that standards vary with different initiating officers.

In practice, the present system comes out worse. The initiator's command of the language can make all the difference between a good and a 'not so good' report. The difference in rank between the initiating officer and the officer reported upon, as also the relationship between the appointments the two hold, certainly influences the write-up. There are few, if any, officers who maintain a record of officers' performances during the year to assist them in the compilation of reports at the end of that period. The 'ACR season' is, thus, a short period when most officers put their best foot forward to get a good report. The resultant reports are bound to suffer from a 'halo' effect, in that they are a record of a general impression about an officer which is applied to all the qualities that are supposed to be covered in the report. There is also a tendency to play upon words satisfying the officer reported upon and at the same time enabling adverse recommendations to be covered. In practice, there would appear to be little evaluation of the initiator during the analysis of a report at Army Headquarters. It would appear, too, that superior reporting officers tend to be influenced, unconsciously no doubt, by the trend of the initiating officer's remarks.

AIM

It is against this background that the proposals outlined in the succeeding paragraphs have been mooted. These proposals aim at overcoming the shortcomings in the existing system, thereby giving a better method of evaluating army officers of the rank of Colonel and below. The highlights of the new method are a new vehicle for reporting on officers, *i.e.*, a revised ACR form, modified channels of submission and a novel scheme of appraisal at Army Headquarters.

PROPOSED ACR FORM

The suggested form is appended to this paper. It is largely self-explanatory. It consists of four Parts; Part I being the same as for the forms in current use and Part II being slightly modified to bring into sharper focus the exact nature of the relationship between the initiating officer and the officer reported upon. Part III is the operative portion of the report. In it, the initiating officer will record the facts of the subject officers' performance during the period under report. This is the basic portion of the report and in fact the basis of the new system. All recommendations and opinions stem from this record of facts and must be related to it if they are to be considered as valid. One feature of this portion is the paragraph wherein officers are reported upon for the standard of reports initiated by them, where of course this is applicable. This paragraph will be of great use to

the analysers of the ACRs written by a commander. The officer reported upon is only shown the first three parts of the report. Part IV of the form contains the opinion of the reporting officer with regard to the qualities of the subject and his recommendations for future employment. To assist him in assessing these qualities fifteen essential qualities have been listed, each on a five-point scale. The degree of each attribute which is applicable, is to be indicated where possible and a reference given to that paragraph in Part III to denote the fact from which this opinion has been derived. Where this is not possible the clause, 'not observed', can be used. Too frequent use of this clause will of course lead to the conclusion that the initiator's knowledge of his subordinate is not comprehensive enough, a fact which in turn may be reflected in Part III of his own report. It will also ensure that the report is based on a regular review of an officer's performance all the year round and that command of the written word is not made use of to assist or cloak recommendations. At the time of analysis of an officer's dossier, those scrutinising the reports will have an accurate picture of the officer's ability and—thanks to the five-point scale—a yardstick for comparison with others. Due weightage would, of course, have to be given to the ability of the reporting officer to faithfully depict his junior, for which guidance can be obtained from his own report. A distinguishing point about the layout of the graphic rating scale is the attempt to represent each degree of a trait as an absolute as opposed to a comparative classification. For example the use of words such as 'good' and 'average' have been reduced to a minimum. By this means one of the inherent disadvantages of the graphic rating scale has been obviated. To overcome the possibility of 'halo' effect it has been ensured that there is no pattern to the positioning of the high and the low ends of the scale *vis-a-vis* the left or right side of the paper.

METHOD OF PROCESSING OF THE REPORT

It will be noticed that the form does not cater for anyone else writing on it other than the initiator. This has been deliberately done in order that the next superior may not be influenced by what he sees. The commander at the next higher headquarters will receive with the completed form, another blank copy with the relevant portions of Part I and Part II completed. He will then be required to fill in as much of this second form as he can, from his knowledge of the officer concerned. The construction of the form together with the fact that he has to complete it afresh, as opposed to adding on to something already written, as in the present system, will obviate to a great extent any influence the opinion of the initiating officer might have on him. After this stage, any superior wishing to append any remarks will do so in manuscript form if he feels he must do so and he will record this fact at the end of Part IV. This will result in entries by higher commanders being made only if they are positive. The two completed forms, together with any additional sheets added, will then comprise the report for the year on any officer and will arrive at Army Headquarters in that shape. To further help the study of an officer's dossier, these forms will be in three

colours. When the reporting officer is of the rank of Lieutenant-Colonel or below, the form used will be of a grey colour, if of the rank of Colonel or Brigadier, it will be in light green and if of the rank of a General Officer it will be in a light pink colour. When these forms are under scrutiny it will thus be easier to give weightage to the remarks contained in them.

At the Military Secretary's Branch, to inject a greater element of objectivity and specialisation into the study of reports, it is suggested that a team of civilian or even Service officer psychiatrists, suitably orientated, should man the cell that analyses an officer's dossier. The final decision with regard to the selection or placement of an officer would of necessity rest with the Military Secretary and serving officers but the facts on which such a decision would rest would be far better culled from the officer's dossier by specialists than by itinerant general service officers as at present.

DISADVANTAGES OF THE PROPOSED SYSTEM

No procedure or system is faultless. The main argument that will be levelled against these proposals is it would mean a change to what may possibly be a more complex method. A closer study of this objection will disclose that the complexity can only be attributed either to the form of the report or to the procedure of processing that report. The stigma of complexity cannot truthfully be made to stick, though in bulk the proposed report on arrival at Army Headquarters will be larger than its predecessor. In content, however, its completion will be far simpler if attempted in sincerity backed with honest effort. The distribution of the blank forms as per the colour code would be no more difficult than the present system. In essence, therefore, the objection would boil down to the word *change*, which should not be a valid deterrent in any good military service. The change-over should also present no great difficulties considering that larger organisations and military services have successfully and periodically changed their officer-rating methods. The implementation would no doubt involve a more detailed exposé than has been possible in the limited space of this paper.

CONCLUSION

To summarise, then, the advantages of the proposed method, it will be seen that the form used will lend itself to a report more accurate in detail, broader based in time, more factual in content and more logical in the recommendations it will contain. The system used in channelling the report to Army Headquarters will preclude any chance of the 'halo' effect coming into play at intermediate headquarters. At the level of the Military Secretary's Branch, the task of selection and placement of officers will be simplified because weightage can be easily given to the standard of reporting in individual cases by virtue of the colour code used, the ability of all officers to initiate reports being known and because an officer's traits are pinpointed to a known degree. The use of a team of civilian psychiatrists will surely bring in a greater standard of objectiveness in the assessment of an officer. Like any other innovation, there will be disadvantages but these are in the main the result of the traditional opposition to change and of detailed implementation, which can be easily overcome if the will for improved efficiency and greater justice is strong enough.

ANNUAL CONFIDENTIAL REPORT FOR 19

(For officers upto and including the rank of Colonel)

PART I

REPORT ON

No. Name in full (in BLOCKS).....

Rank with date	{	Substantive.....	{	Regiment/Corps
		Acting		Date of birth.....

Decorations Type of commission.....

Qualifications Date of commission.....
(Ref. AO-125/58)

..... Date of seniority for promotion.....

Previous medical category Married or single.....

Present medical category.....

.....
*Signature of Medical Officer**Signature of Officer*

Date

Date

PART II

(To be completed by the Initiating Officer and to be shown to the Officer being reported upon)

REPORTED BY

1. No. Name in full (in BLOCKS).....
2. Rank Appointment
.....
3. Period covered by this report : From.....To.....
4. The Officer reported upon has physically served under me for a period of.... months and....days immediately prior to the date of this report.

BASIS OF REPORT

5. This Report is based on:—
(Cancel those entries NOT applicable and initial the one applicable)
 - (a) Daily contact.
 - (b) Frequent observation.
(At least once a week for periods of upto two hours on each occasion.)
 - (c) Infrequent observation.
 - (d) Records and reports.
 - (e) Others.
(Specify)
6. During the period covered by this Report he has been employed as under:—
 - (a) FromTo As
 - (b) FromTo As
 - (c) FromTo As
7. How long has he been serving with troops in his present assignment?
8. How long is it since he last served with troops?

PART III

(To be completed by the Initiating Officer and to be shown to the Officer reported upon)

REMARKS ON PERFORMANCE OF DUTY

1. At what level has he been tactically/technically exercised in command of troops?

(To be completed in the case of officers in command of troops only. If the officer has not been exercised, give reasons.)

2. Leadership
3. Physical fitness
4. Professional ability
5. Administration
6. General remarks
7. How does he write the ACRs of his subordinate officers?
(To be completed only where applicable)

He is—Too strict/Strict/Accurate/Lenient/Too Lenient in his remarks and recommendations.

(Tick and initial appropriate entry)

.....
Signature of officer reported on and date
(Name and appointment in Blocks)

.....
If communicated by post, initials
of initiating officer and date.

(To be completed by the Initiating Officer and NOT to be shown to the Officer reported upon)

PERSONAL QUALITIES

Note: (a) Every quality observed and reported on must be related to actual facts contained in Part III.

(b) Tick and initial the degree of the quality applicable.

Refer to para No.
in Part III

1. Courage	Dauntless	Bold	Plucky	Extra-cautious	Timid	Not observed
2. Determination	Resolute	Persevering	Adherent	Wavering	Defeatist	Not observed
3. Reliability	Can be relied on under all conditions	Can be relied on except under most difficult conditions	Dependable for normal work	Not always dependable for normal work	Not at all dependable	Not observed
4. Physical endurance	Feeble	Soft	Adequate	Tough	Indefatigable	Not observed
5. Initiative	Original, ingenious	Enterprising, resourceful	Persistent, generally acts on his own responsibility	Casual, acts on his own but needs advice	Apathetic, needs constant guidance	Not observed
6. Drive	Unsparring of effort, livewire, cannot be diverted	Forceful, determined	Pushing, keen	Forceless, not always energetic	Inert, lazy, gives up easily	Not observed
7. Speed of decision	Exceptionally quick, readily decisive	Fairly quick, and certain	Sure, alert	Hesitant, slow to react	Indecisive, vacillating, easily bewildered	Not observed
8. Loyalty	Puts himself before others always	Sometimes unintentionally disloyal	Fairly Loyal	Loyal to duty, seniors and juniors	Unswervingly loyal	Not observed
9. Moral courage	Lacking in principles and moral fibre	A 'yes' man	Good moral standard	Good sense of right and wrong	Possesses highest ideals, lives up to them	Not observed
10. Professional ability	Extremely proficient	High degree of ability and knowledge	Knows his work	Fairly sound in routine matters	Incompetent	Not observed
11. Adaptability	Rigid, orthodox	Conservative, difficulty in adjusting himself	Mouldable, normally adaptable	Adjustable, ready and successful with unfamiliar work	Resilient, versatile, exceptional breadth of mind	Not observed
12. Organising and planning ability	Outstandingly able, thorough	Successful organiser, precise	Systematic, can plan routine matters	Haphazard, wasteful in effort and resources	Bad organiser, confused	Not observed
13. Power of expression	Incoherent, muddled, ineffective	Strained, can express only simple situations	Expressive, clear	Fluent, clear, brief in most cases	Eloquent, clear brief in all cases	Not observed
14. Cooperation	Will fit into any team	Volunteers to help, works well with others	Willing participant, works in a team	Aloofish, adequate, works better on his own	Uncooperative, difficult to work with	Not observed
15. Ability to influence the group	Inspiring	Assertive	Convincing	Mild	Submissive	Not observed



Recommendations

(To be completed by *INITIATING Officer*)
(NOT to be shown to the Officer Reported on)

16. What type of appointment do you consider him fit NOW in every way to hold?
- (a) With troops
- (b) On the staff
- (c) In category 'A' instructional establishments.
17. Is he desirous of, and recommended for ERE other than Staff? If so, what employment?
18. Do you consider his future lies in Command or Staff or both?
19. Do you consider him fit for promotion? If yes, state rank.
20. If answer to Para 19 is 'Yes' do you consider that his promotion should be accelerated?
21. If answer to Para 19 is 'No' or 'Not yet' indicate paras in Part III where reasons have been given.

.....
Signature of Initiating Officer and date.

.....
Name and appointment in Blocks

22. Further remarks have been attached by:—

- (a) (Name)(Rank)(Appointment).....
(Number of pages).....(Date).....(Initials)
- (b) (Name).....(Rank)(Appointment)
- (Number of pages).....(Date).....(Initials)
- (c) (Name)(Rank)(Appointment).....
(Number of pages)(Date).....(Initials)
- (d) (Name)(Rank)(Appointment).....
(Number of pages).....(Date)(Initials).....

INDIAN WAR ECONOMY—1939-45

(A Review Article)

BY P. N. KHERA

WARS in the modern age, in addition to being more deadly, are also more expensive than those in the past. This is so chiefly because modern wars are what has been termed 'total' in their nature. This implies that the whole of the aggressor population (or state) and the whole of the defender population is involved in the struggle in one form or another. Behind the fronts, the whole population is organised and regimented by the respective governments to produce requirements of the armed forces—food, clothing, munitions, transport, etc. An ever-increasing utilisation of the natural and industrial resources of the nation becomes necessary in order to sustain military operations at an increased tempo. This increased military and civilian involvement in modern wars naturally results in immeasurably greater cost of wars, a factor which affects the whole economy of the nation, thus making war economy a subject deserving of study by all. The publication under review therefore serves a very useful purpose, and the Historical Section of the Ministry of Defence has to be congratulated on and thanked for, bringing out this volume relating to Indian war economy during the Second World War.*

The volume, which covers more than five hundred pages deals with the three allied subjects of war supplies, war industries and war finance.

The first part describes the efforts made in India, just a little before the outbreak of war and then during the war to procure supplies needed for her armed forces either from the internal resources of the country or from abroad. India was rich in natural resources, and these to some extent had been harnessed to the need of her small peace-time army. Thus, when the war broke out in September, 1939, India had, in the matter of supplies at least, achieved some sort of limited self-sufficiency. But the exigencies of war and the sudden and rapid expansion of the armed forces resulting therefrom soon revealed a huge gap between the requirements and the available supply. Herculean efforts were needed to fill this gap and India did her best. But it can be easily realised that India, unaided, could never have achieved anything approaching satisfactory results. This was particularly so after the entry of Japan into the war and the decision to make India a base for all contemplated operations in the East against Japan. Thus India, in addition to her own efforts in pursuance of the recommendations of the pre-war Auchinleck and Chatfield Committees, received help

* *Official History of the Indian Armed Forces in the Second World War, 1939-1945: Indian War Economy (Supply, Industry and Finance)* by N.C. Sinha and P.N. Khera (Longmans, Bombay, 1962) 550p. Price 50sh.

from the following foreign agencies:—(i) the British Supply Mission, popularly known as the Roger Mission, (ii) the Eastern Supply Council (iii) Lend-Lease and (iv), the United States Technical Mission to India. While Lend-Lease method eventually became the most important source of supply, the other three agencies helped to achieve co-ordination of effort between the Empire and Commonwealth countries, as well as in exploiting the resources of India to an unprecedented extent. In spite of the lack of enthusiasm which could have been generated by the grant of political freedom, India was turned into an arsenal for the supply and production of arms and armaments for the large number of troops based on India. In addition, a thousand other things, like food and clothing, to the smallest requirements of the soldiers were made available from the country. The detailed account of all these efforts to supply these articles and the targets achieved and their statistics are given in the book under review and in its appendices.

Such a gigantic effort at supply was bound to have its impact on the industrial structure of the country. Steel and textile, munitions, electric energy, ship-building, heavy industries, tool manufacturing, chemical industries, aircraft, harness and saddlery, footwear, automobile industry—to mention just a few—all received a great fillip, both in the private and public sector. A comparison of the maps facing p. 131 and 199 shows that Ordnance factories (government-owned) in 1939, which were only 8 or 9, increased by 1945 to more than 30. This is only in one field of production, and that too in the public sector only. It is really impossible to calculate exactly the tremendous increase that took place in extension and development of old and new industries both in private and public sectors. A very commendable effort has been made in the book, within the limits, to describe efforts made, steps taken, difficulties encountered and overcome and finally the measure of success achieved.

The third part dealing with Finance is still more interesting and revealing. It first gives an account in outline of the Defence Expenditure from 1918 to 1938—the period between the two wars—and the efforts made to cut down the defence budgets particularly during the twenties. This was done at the cost of neglecting to modernise the army, but the mistake was realised only in the thirties when the political situation in Europe and the rapid rise of the Nazi party in Germany made people realise that a second world war was inevitable. Belated efforts were then made to mechanise the Indian Army and, as a result of the Garrahan Award, the British Government's contribution towards the improvement and maintenance of the defence forces was started. This was increased in 1939, but, by that time, the war clouds were casting their sinister shadows on the world, and when the war actually did break out, the Indian army was still largely equipped with outdated weapons and only very partly mechanised.

Thus, during the war period, India was faced with the triple problem of financing her own war preparations, paying for the expansion and mechanisation of her army and making huge rupee disbursements on behalf of the U.K. and other allies to help them purchase their requirements. As a result, there was an enormous expansion of currency to meet all these commitments, which naturally led

to inflation, shortage of consumer goods for the people and the consequent rise in prices leading to considerable hardship to the local population of all classes. Of course, the United Kingdom re-imbursed India to the extent of her share of the war expenditure, but this was in the shape of sterling which began to accumulate to the credit of India in the U.K. but could not be utilised. Thus at the end of the war, India emerged as a creditor country and all her debts were wiped out. This was a happy result for the future of India, but it was achieved at the cost of considerable suffering and hardship caused to the generation which lived through the war and had to bear the burden of taxation and shortage of consumer goods.

All these changes in the Indian economy, the ways and means which the Indian Government adopted to finance her and the allies' projects, the financial settlement with the U.K. Government and other relevant matters are lucidly discussed in the book. There are numerous interesting charts, graphs and appendices which add to the usefulness of the book, and make this exposition of an intricate subject all the more worth a perusal and careful study.

The expert commander strikes only when the situation assures victory. To create such a situation is the ultimate responsibility of generalship. Before he gives battle the superior general causes the enemy to disperse. When the enemy disperses and attempts to defend everywhere he is weak everywhere, and at the selected points many will be able to strike his few.

—SUN TZU.

BOOK REVIEWS

GENERAL

Black Star in the Wind by Robert Raymond (MacGibbon & Kee, London, 1960) 288p. Price 25sh.

This is an interesting account by an Australian journalist of his life and experiences in Ghana and his impressions about the country and its people. The author was in Ghana from 1953 to 1957 when it was still the British colony of the Gold Coast. A large number of British officers were working for the Government at that time and in the first section of the book he deals mainly with the life, problems and pastimes of the British expatriate community that were shared by him. In the second section he gives us his impressions regarding the other foreign communities residing in Accra, the capital. We learn of the 'isolated' Syrian, Greek and the Lebanese interested only in sending profits out of the country and the ineffective small American community who considered Accra as the Siberia of the United States diplomatic service. The author has good words to say for Raja Rameshwar Rao, the India's Commissioner, whom he credits with laying the groundwork for the close relations between India and Ghana and for having left behind an image of India and its philosophy which was to exert strong influence on those in search of "the African Personality." This section also includes an amusing account of Ghana's press, its exuberance and misprints.

In the remaining three sections the author tells of his experiences while touring the country. The author's journey across the northern border into Upper Volta gives a glimpse of the conditions in that former French Colony. Towards the end there is a vivid description of the excitement, confusion and enthusiasm when American negro Louis Armstrong and his jazz band visited the country in 1956. The author concludes with a description of the celebrations that marked the independence of the country in 1957.

The book is well written and the account reflects the gay and buoyant nature of the people of Ghana. Though the whole period was an eventful one in the political evolution of the country except for a chapter on Mr. Nkrumah's rise to power and occasional references to views of chiefs met by him the author does not dwell on politics. The book as such does not indicate the stresses and strains that beset Ghana before independence. But it gives an interesting picture of the country and the life of its people.

V.N.D.

Massacre at Amritsar: by Rupert Furneaux (George, Allen and Unwin, London, 1963.) 183p. Price 25sh.

There are many broad surveys of India's national struggle but there are few studies of the significant events which together made up the struggle. The book under review is a study of the latter kind. With the help of official documents as well as the accounts of eye-witnesses of the survivors, the author recreates the tragedy of the Jallianwala Bagh and succeeds remarkably in presenting the various facts. It is, of course, true that if an Indian had written with the same material

at his disposal, the emphasis in the book would have been entirely different; the mass upsurge in Amritsar rather than the agony of the small British colony would have been under focus. Yet the present account does provide interesting insights into the mechanism of generating a mass struggle in the Punjab of those days. Particularly fascinating are the references in the book to the Hindu-Muslim question, the hopes of the British about Hindu-Muslim conflict, etc. It would be a researchable topic for any Indian scholar to go further deep into this event and see how exactly such mass upsurges were brought about.

The most interesting aspect of the present book is the novel explanation the author gives about the reasons for Dyer's conduct. It is the dread disease which Dyer already had at the time of Jallianwala Bagh—arterial sclerosis—which is held responsible for his poor judgment. In fact, the author states in so many words that Dyer might have been a victim of some mental disorder.

At one place, the author writes: "Dyer believed for the rest of his life he had been right to go on firing. He had to believe that because for his own peace of mind, the alternative was too horrible to contemplate." Dyer, again, has left behind a problem of peace of mind for the British people as a whole. For, there are very few ghastly acts in the history of British colonial rule in various parts of the world. It is not easy for the British historians to accept the facile belief among many in Britain that Dyer saved India, meaning thereby the British in India. It is also not easy for them to accept the Indian nationalist view-point that Dyer's act was the culmination of a British policy of repression in this country. The explanation contained in the present book certainly is a way out for the present generation of Britishers in so far as their own peace of mind is concerned.

S.G.

HISTORY

European Resistance Movements, 1939-45 (Pergamon Press, London 1960)
410p. Price 40sh.

The book under review is a collection of documents presented at the First International Conference on the History of the Resistance Movements at Liege and organised by the Belgian Professors of History. Quite naturally it follows that most of the papers are in the French language, and most Indian Service readers cannot follow the book.

One or two points from the papers presented in English are, however, of value to the Indian reader. Denmark was occupied, and a resistance movement grew within it as the war progressed in spite of the fact that a parliamentary democracy continued to govern the country. "One of the facts which, therefore, arises is that in the Second World War occupation did not mean isolation. Because of modern inventions, particularly radio and aircraft, the conquered peoples had an opportunity of close contact with the free world. When their anger was sufficiently raised they could use their opportunity to take up a struggle for freedom and join battle, even in a country in which a normal battle was deemed utterly hopeless...Resistance-war demands national unity as well as organisation. If the organisations are strong enough...it seems that they are very hard to choke...The Danish conclusion must be that suppression is a two-edged sword."

From the experience of the Jews who participated in the Resistance, often in Partisan Territory of the Russians, arises the point that the "Orthodox Jew

did not believe that it was possible or even desirable to resist the Nazi in any way." There is indeed similarity here between Gandhian *ahimsa* as a philosophy, but it is interesting to see the contrasting effectiveness of these in the different contexts, German and British.

A.M.S.

BIOGRAPHY

The Yankee Marlborough by R.W. Thompson (George, Allen and Unwin, London, 1963) 363p. Price 35sh.

"When Churchill was born on 30th November, 1874, this world was doomed. Eighty five years later, with his remarkable performance on the world stage already ten years in the past, Britain, its people, and all they possessed, could be wiped off the face of the earth in fifteen minutes by either one of the two great powers—new empires of a power previously unimaginable, had arisen and nearly all the pawns and minor pieces had been swept off the board."

"But for Mrs. Everest, his nurse, Churchill's childhood was peculiarly alone, even for his class. His parents were deeply involved in the whirl of politics"... "The nursery thread runs through his life from the cradle to the grave. It is clearly discernible in his personal attitudes."..."He was above all the boy who never grew up."

After the death of Mrs. Everest, it was his mother (then a widow) and thereafter his wife, to whom he turned for shelter, solace and sympathy in all moments of turmoil and crisis. He never saw any one save himself in the centre of the stage, and his country, with an unquestionable and adorable monarchy, was the only area of the earth that mattered to him.

Thus, his built-in pride as an inheritor of the tradition of the great Marlborough and the accident of his premature birth at Blenheim Castle allied with the environ of his father's political career engaged his vivid imagination and was the driving force of his life's motivation.

But, it must be remembered, that he must be one of the stupidest scholars that ever went to school. Except for his wonderful command of the English language he was incapable of absorbing any instruction, be it Latin or simple arithmetic. Indeed, he was not even capable of passing into or out of Harrow and was nominated to Sandhurst because he was his father's son and after considerable string-pulling by his mother.

Winston Churchill was not even properly a Churchill. He was certainly not a descendant in the male line of Marlborough, the famous victor in Europe. In fact, a Sir Winston Churchill of Dorset was the father of Marlborough and had a daughter Arabella who became mistress to James II. Arabella's son, James Fitz James, a bastard nephew of the great Duke was an even more distinguished soldier than his uncle and became the Duke of Berwick, Marshal of France and a Duke in Spain also. Marlborough and all his family, in fact, were a famous family of mercenaries. But, after the Duke of Marlborough they failed in the male line and became extinct when Marlborough's son died in 1703. But Marlborough's daughter, Anne, married a Spencer and when the male family died, the Spencers were permitted, by a special Royal decree, to take the Marlborough title.

As for his mother's side, the Jeromes, Churchill's maternal grandmother, born Clara Hall, was half-Iroquois Indian from New England.

The author feels it was this combination which gave him the scintillating brilliance of a Churchill, through his father, Lord Randolph Churchill and the stamina of a Jerome as the son of Jennie Jerome, his mother.

The book traces his life from a dispassionate angle and brings out clearly how Churchill's American blood also led to his final wooing of the U.S.A. and his faith in the alliance of the English-speaking peoples as the ultimate salvation of his world. It points out that, when this alliance did come, it found all that Churchill had stood for crumbling and the very association making Britain into an appendage the like of which Sir Winston could never have foreseen.

The Edwardian Era and World War I and Winston Churchill's meteoric rise (by sometimes rather doubtful methods), his vacillating political affiliations and his ultimate, child-like leaning on Lloyd George are extremely well written. How he earned the inflexible hatred of Bonar Law and the Tories and then how he became a Tory under Baldwin and finally put on his father's former robes as Chancellor of the Exchequer is most subjectively and vividly described. However, the writer feels that Churchill more than any one else was responsible for England's financial debacle in the twenties. This, combined with his incurable hatred of labour unions, the Labour Party and anything socialist, precipitated the general strike of 1926. However, in the 1930s, because Baldwin and Chamberlain had no time for him, he became the spearhead of the dissidents. This proved to be the beginning of his period of preparation for his leadership on the world stage.

How Churchill became Prime Minister, how his American blood made him call across the Atlantic and secure the co-operation and then the participation of Roosevelt is well described. The author, however, is obviously not a Roosevelt admirer. He describes how slowly and surely Roosevelt and Stalin came nearer in their points of view on strategy and on postwar world concepts. He gives the impression that Churchill was rushed into the unconditional surrender statement, pushed into acceptance of an agreement for a front in France against his own wish for a front in the Balkans from the "Soft underbelly" of Europe. This Russo-American unity does not, however seem surprising to one as a reader; for surely it seems that the unfortunate and completely distraught Europe would have been even more so had Churchill's conflagratory strategy prevailed.

It was Churchill who said, "you cannot unscramble a scrambled egg" and from R.W. Thompson's book it is clear that he was a master of scrambling; unfortunately for him, and also for the world, neither Churchill nor Roosevelt was at Potsdam and, thus, the world will be forever left with a question mark as to what might have been the ultimate outcome had these two men, rather than Atlee and Truman, met Stalin across that fateful table.

E.H.

Rafi Ahmad Kidwai by Dr. Pran Nath Chopra. (S.L. Agarwal, Agra, 1960) 227p. Price Rs. 10.

As Shri U.N. Dhebar in his foreword has said, "Rafi Saheb will be remembered, apart from his role as a fighter for freedom, as a great administrator...in the face of the cruellest blows, Rafi Saheb showed the spirit of untainted patriotism."

The book has been handled by a well-trained reporter rather than a biographer. The account is more accurate and 'full when it relates to Rafi Saheb as a minister, particularly as a minister in the Central Government. This may be natural, as his activities and their effect were then more prominently and fully written about than those of his earlier days of decision and struggle.'

Again, the author, because of his outstanding ability to observe and report a scene, describes extremely well the events which he himself witnessed, rather than being able to build a picture from facts and documents presented to him.

Rafi Saheb, born deep in the heart of Avadh, was from a simple but highly intelligent family. He lost his mother early in life and his father married again. Thus he came under the considerable influence of his uncle Vilayat Ali. Of Vilayat Ali, the author writes, "There was hardly any political or national movement of importance in which he did not take part."

Rafi went to the M.A.O. College, Aligarh, where his nationalist tendencies soon became apparent. His name appeared prominently on the 'black list' of a pro-British Professor. He left the college in 1920 without graduating. But his uncle had died in 1918, "a calamitous event for the family." However, the call of Mahatma Gandhi to students to join the struggle was a welcome challenge. Rafi threw himself into the kisan movement which began just then to take shape. The success of the non-co-operation movement in Bara Banki District was largely due to his efforts. The British authorities tried to bring pressure on his father, a government servant, but to little avail; even though the activities of Rafi had a most adverse effect on the career of his father. After his first term in jail, Rafi Saheb was released in 1922 and soon after became Personal Secretary to Motilal Nehru and, with his shy yet warm personality, he soon became a part of that family.

From here onwards, he was more and more looked to for organisation and execution of tasks that needed ability, and, in 1930, he found himself Secretary of the Provincial Congress Committee. In this office he headed a Committee which made a 275-page report on the agrarian situation in U.P. They recommended 50 per cent remission in rents to help the peasant to survive, but the Government took little notice; so, a 'no-rent' campaign and a clash became logically inevitable. Rafi elected as was the 'no-rent' dictator. Though he went underground, he achieved brilliant success. Raghukul Tilak says of him, "He had no taste for theoretical discussion, but a smile or a joke from him could change the atmosphere and depression would give place to cheer as if by magic."

In 1936, the whole burden of fighting the election fell on his shoulders as he was also made President of the U.P. Parliamentary Board. He adopted many and varied means not only to ensure success, but to deny and frustrate their opponents—all done with great tact and quietness; but he had no time for his own election and lost, while winning a stunning victory for his party. However, he was subsequently elected and given the portfolio of Revenue and Jails in the first U.P. Congress ministry.

From here onwards, we see the growth of Rafi Ahmad, the administrator. In every ministry he took there were reforms and noticeable improvement. Even at the last, when he deliberately took the food portfolio, which was considered to be the graveyard of ministers, he made a brilliant success of it. The author writes, "The Prime Minister, it is understood, would not agree to give this to Rafi, who was already a target of attack from all sides. Indeed while a group not too friendly to Rafi Saheb were suggesting this and were being turned away by the Prime Minister, Rafi Saheb himself turned up and accepted in spite of the Prime Minister's arguments against it."

A dynamic personality like his drew many friends and, inevitably, others envied him. It was because of the latter that he found himself at the Centre rather

than in his State where his achievements had already been massive by the time freedom came.

His end came through his usual disregard for himself. It was tragic indeed that Srimati Subhadra Joshi, one of his close political associates, managed to persuade him to ignore doctors advice to go to his last fateful meeting in support of a Congress candidate at Delhi. He literally forced himself to go through with it till he could no longer manage. On his way home, when others felt anxiety for him, he brushed aside their fears, and on reaching home, he lay down and then died quietly.

The last chapter of the book shows how Rafi Ahmad Kidwai was not only a great administrator, but even greater as a human being. In his busiest day he had time for others. "If I give a few minutes to each, it satisfies them; otherwise, they would feel disappointed." That really was the man; his mind and his character; Never to hurt others and yet to put *himself* out if necessary, without expecting anything in return. So, hundreds whom he helped, and his fellow countrymen all over, will long remember him with love.

E.H.

Samundra Gupta—Life and Times by B.G. Gokhale (Asia Publishing House, Bombay, 1962). 100p. Price Rs. 12

The author is currently Professor of History and Director, Asian Studies Programme at Wake Forest College in Winston—Salem, North Carolina, U.S.A. In this short book he aims "at presenting in a somewhat bold relief the main events in the life of Samundra Gupta and the conditions of his age." As the author admits, the material from which to reconstruct the personality of the monarch and the then scene is scanty: "his history is preserved in no more than fifty lines of texts in inscriptional records and numismatic epigrams."

With this background, the book leaves much to be desired for the Indian reader who wants to know something more than the barest detail. The fact that Samundra Gupta performed the horse sacrifice and extended his domain is mentioned time and again, but the reader is left wondering as to the constituents of this important sacrifice, and its exact link in the scheme of things, political, military as well as religious. Mention is made of "just" wars as an instrument of policy, but, other than mentioning that ten "ranks" existed in the military officer class, and that the army consisted of elephants, chariots, horsed and foot soldiers, there is hardly any indication how this powerful weapon was used in the extension of Samundra Gupta's domain, or in the maintenance of order after its conquest.

Even the civil administration seems depicted far too sketchily, and, after the bare enunciation of the variety of office holders, it is difficult to visualise how the vast empire was held together, especially when—as the author points out—the Gupta administration was "more decentralised than that of the Mauryas." Were the "satraps" in distant "Subas" brought into an empirewide cohesion by the personality of the emperor, by faith or what? And amongst these "official accounts," were the people of the time anything other than members of the various "Varnas" and the "jatis"; was there any reaction to the changes in their overlordship? Possibly the inscriptions and the coins might have little to say on these matters, but it is hoped that in subsequent editions, the erudite author will be able to throw more light on these matters, possibly finding space for these at the expense of some of the more commonly known "diversions" into the Vedas, the Arthashastra and the Smritis—especially for the Indian reader.

A.M.S.

Philip II of Spain by Sir Charles Petrie (Eyre and Spottiswoode, London, 1963) 319p. Price 30sh.

This is a biography of Philip II of Spain who was born in 1527 and was the eldest and only legitimate son of Charles the Fifth, Holy Roman Emperor and King of Spain. He was crowned king before he was thirty and ruled for more than forty years, dying at the ripe old age of 71 in 1598. A little before he ascended the throne of Spain he had been given the kingdom of the two Sicilies by his father, so that he should be of the same status as that of Queen Mary Tudor of England whom he was going to marry soon. Both Mary and Philip saw in the marriage the means of bringing England back to the Catholic fold and undoing the work of her father Henry the VIII. Though the majority of Englishmen were still Catholics at heart, the marriage was not popular with them. Sir Charles has very clearly brought out the reasons for this, and although he has proved that Philip constantly pleaded with Mary for moderation in her treatment of the English Protestants, it was commonly believed at the time that Philip was responsible for encouraging Mary in her policy of burning the 'heretics'.

Sir Charles has written a very readable biography of this great and controversial figure and has not lost perspective and balance in whatever aspect of Philip's life or work he has described. For example, on page 57, it is mentioned that when Philip as a young man was vested by his father with full powers and asked to look after the affairs of State, he devoted himself to the business of government with great earnestness, "but at the same time all the evidence goes to show that he managed to get that pleasure out of life which is normal in young men in the middle twenties." Who but Sir Charles could have described Philip's exploits in the realm of sex with such powerful moderation!

This is just an example to show that the whole book is marked by restraint and balanced view which go to show the author's own superior power of discernment. The style is easy and unlaboured, and the book, although mainly a biography, is also worthy of an examination for the light it throws on the principal characteristics and ideas of the 16th Century.

The author has also made an important contribution to historical truth at various places while exploding some popularly accepted theories. One of these relates to the legend that when the shipwrecked Spanish soldiers of the ill-fated Great Armada took shelter in Ireland, they were massacred by the Irish of their own accord. In the words of the author, "This lie is still going the rounds of English history-books, so it is time that it should be contradicted." And then he sets about contradicting it in so convincing a manner!

From the beautiful pen-picture he draws of his subject, Philip appears as a conscientious and capable administrator, with a strong sense of justice, 'given the standards of his time.'

On the whole, a delightful book, written in fine style, with some very pleasing illustrations, a useful genealogical table of the family of Charles the V and an index.

P.N.K.

ARMY

Modern Guerilla Warfare edited by Franklin M. Osanka. (Free Press of Glencoe New York, 1962) 363p. Price \$7.50

Guerilla war is not a *type* of war, but a *form* of warfare. It is a way of waging

war in which a weaker side can assume the offensive in "selected forms, times and places."

Lieut.-Colonel F. Wilkins, in Chapter I, rightly points out that guerilla is not only a very ancient way of war, but quotes the English 100 Years' War where the constable of France, du Guesclin, ultimately retrieved all French territory from England by avoiding open battle. However, Wellington returned the compliment against Napoleon in Spain between 1808—1814.

Even in World War I, T.E. Lawrence used guerilla tactics most successfully against Turkey. In fact, Lawrence reduced his thinking on guerilla warfare into positive form. He claimed "that no enemy could occupy a country employing guerilla warfare unless every acre of land could be occupied by troops."

Shortly after Lawrence, Lenin examined this form of warfare and was followed twenty years later by Mao Tse Tung. Mao's theories, beside being based on his own field of experience, show also considerable study of the works of Sun Tzu, a Chinese writer and general of 500 B.C. Mao's contribution, which goes beyond Lawrence's concept, is his theory that the guerilla force ultimately and by stages gives rise to a regular force for final triumph and victory over the enemy.

Lt. Col. A.H. Sollom, in Chapter II, in analysing Mao, asks, "If a country is ripe for the formation of partisan bands, in that the bulk of the people will support them, who then are to become the active members—the doers, so to speak?" He feels the peasant, the farmer, the patriot and the idealist are the bulk of such persons. The former soldier also easily takes to an active role; but, no matter from where he springs, the active partisan must have courage and the will to face hardships even unto death.

Partisan forces usually operate best in those areas of the enemy where the latter are least prepared and equipped to combat them; in their rear. Moreover, the partisan is usually more familiar with the lie of the land. Indeed, it is important that the guerilla operates in an area where the population is friendly to him, so that, by living in the community and remaining in daily contact with the enemy, the guerilla can get good intelligence, do sabotage and harass the enemy, as well as deter local collaborators.

Chapter 18, which is Field Marshal Papagos's contribution to this book, is an interesting study of how he just managed to hold off and finally overcome guerillas in Greece. It is a good study in anti-guerilla tactics.

Perhaps, the most interesting chapter is chapter 20 by Bernard B. Fall: "*Indo-China: The Seven-Year Dilemma*" (written in 1953). The dilemma began with the French under General Leclerc re-occupying Indo-China after World War II, after the emperor of Annam had already abdicated and handed over the Government to Ho Chi Minh. When the latter tried to prevent French troop movement by road blocks, his troops and towns were promptly shelled. The French swept through Indo China by the use of swift road movement and massive fire concentration.

However, as time went on the French had to abandon their untenable outposts, and so they concentrated round the rice-growing and city areas. Their system of forts and bunkers, totalling more than 10,000, with expenditure of more than five million tons of concrete alone, was a tough nut to crack. Instead of trying to crack it, General Giap, the Vietminh Commander, went away into Laos with

his entire forces. They bypassed the French strongpoint on the Plain of Jars and were soon within a few miles of the Thai border. Here, as recently happened on our own border with China, the Vietminh suddenly decided to withdraw on their own as mysteriously as they had decided to attack; but the French were now forced to spread themselves out as they could not risk a repetition, and also, in order to give protection to Laos. By the time the war had gone into its seventh year, the French had lost 43,000 as dead with 40 per cent casualties from its officer and N.C.O. ranks. There was no substitute left for victory to the French and they were forced to fight on.

Chapter 21 is a personal description of this struggle given by a French Lieut.-Colonel, Marc E. Geneste. His picture is rather depressing and he reflects the mind of an invader caught in the impenetrable guerilla net. "In a pill box hit by my tank," he says, "I find only one forearm cut at the elbow by a shell. The man has fled; but he has left his weapon with his right hand—a cross-bow."

Ernesto "Che" Guevara (one of Castro's best leaders) has written what may be called a text book of offensive guerilla deployment and its transformation into a revolution. It is worth reading for a serious student of military deployment and tactics, particularly because it is written rather clearly and concisely.

The last chapter is a lecture by Rostow, the American economist. It is entitled, "Countering guerilla attack," but it is principally an inspirational talk to students passing out from an anti-guerilla course and there is not much military material in it.

The approach to the subject and the presentation of various aspects of it through the writings and accounts of numerous authors brings out rather vividly and with local colour most of the salient thoughts on guerilla warfare. It is particularly clear, after reading this excellent compendium, that in such matters guerilla action is a cheap and most effective way of integrated mobilization and self-preservation. However, as Deckey Chapelle, the world famous lady news reporter, has said about the guerillas of Cuba, "Their conspicuous military virtue was their ability to maintain a high volume of fire which would have discouraged less motivated fighters... If there is any military lessons from the Cuban revolution... I think this is it: Machinery does not win wars, Men do."

E.H.

The Wings of Pegasus: The Story of the Glider Regiment by Brigadier George Chatterton, D.S.O. (MacDonald, London, 1962). 282p. Price 40sh.

Brigadier Chatterton was the founder and the father of the Regiment. Though the title of the book sounds exciting and some of the adventures and exploits of individuals are indeed thrill-packed, yet one is left with a peculiar sense of futility about the over-all screening of the Glider pilot regiment.

Brigadier Chatterton is fortunate in that he has an Army, Navy and Air Force background. Therefore, technically, he was highly suited to be a glider pilot. However, his assertion of his own greater suitability than that of Lieut.-Colonel Lock, who had worked in the War Office and who was an experienced and fully-trained soldier, would seem to be in doubt. For, Brigadier Chatterton could never have seen the strategic and tactical uses of gliders beyond the vision of a "snotty". Indeed, the book is an ample proof of a specialist pushing his speciality beyond the straining point of necessity.

War does give rise to its Wingates; and such single-minded experts who see nothing else but the small canvas on which the image of their own vision is pictured are as great a menace to the greater whole as their opposite numbers at the other end of the scale—the Colonel Blimps. This anamorphic type seems to have thriven particularly amongst certain sections of the R.A.F. and, twenty years after the war, the question comes to the mind that, were men like Harris and Chatterton right? Did the cruel, non-stop bombing of open cities and the use of gliders (be it in three full-sized operations only) justify the time and effort spent? Indeed, it seems clear that not only did they transgress that war-principle, of economy of effort, but sometimes they also changed the aim itself rather than maintained it. The glider regiment's operations in Sicily seem to have been so futile that the so-called 'vital' bridge which they were to have captured from the Italians near Syracuse was taken back from them after they had suffered heavy casualties in men and material. The Italians had time enough, thereafter, to destroy the bridge had they so wished; but, they not wishing to do so, let the sea-landed force come and take it off them with little or no effort.

In fact, what one feels about all these operations is, "Was the journey [to Sicily] really necessary?" for the invasion and for what ultimately turned into the battle of Arnheim and even for the Normandy landings.

However, this is not to detract from the magnificent conduct of the men who fought and flew as glider pilots. Their stories are individual and collective epics and the training and morale of this fine body of men is something that may well live in the annals of the British armed forces. Indeed, the most inspiring feature of the whole book is the vivid picture it presents of how men of Army and the Air Force, sometimes most unwillingly thrown together, soon got over looking at each other's nasty habits and became so hard and fast in their unity of purpose and community of spirit that neither shell nor shot could shake them.

The book would be suitable for youngmen in their teens to be read as a book of adventure and courageous exploits; as a contribution to military literature it has neither literary nor military value. Of interest are the designs of gliders of various makes and the uses to which they could be put. From the early Horsa to the Goliath Hamilcar, there was great engineering skill subscribed, particularly if one thinks back, as Brigadier Chatterton did, that the whole thing was just conceived and put down straight on the drawing boards by men who had probably never left the ground in their lives.

So far as get-up is concerned, the proof-reading has been poor and there are numerous errors, both grammatical and typographical, which do nothing to make the book any more enjoyable. For instance, on page 123, "a great stream of gliders *were* to land" and, on page 126, "The pilots in their cockpit remained *to top of* the rubble". In fact, some of the grammar and some of the idioms (such as, "splitarse" and "pulled the lit") are, to say the least, jarring to the flow of written English and are by no means a credit to Pangbourne where the author spent his teens being educated.

With all the admiration of and tribute to those behind the great and strange men and machines, one must still more than share the feelings of the senior officer quoted by Brigadier Chatterton, who said:

"Hello, what is this?"

"Oh! It's this new-fangled rank, 'Commander, Glider Pilots,' is it?..... Well, all I can say is, it all seems damned unnecessary to me.....!"

E.H.

History of 7th Duke of Edinburgh's Own Gurkha Rifles: Produced under the direction of a Regimental Committee from the Story compiled by Colonel J.N. Mackay, DSO (William Blackwood, London, 1963) 438p. Price 45sh.

Regimental Histories are like family albums, personal, fascinating, and scented with nostalgia of the past—of good old days, when men looked like Gods. In the cosy family atmosphere as children turn the fragile pages of old records, there are cracked the family jokes, and the more impetuous are shushed for pointing out too loudly how funny grand-father's whiskers looked. For the outsider, the antics of the children looking at the albums are normally more interesting than the albums themselves. There are times, however, when the carefully preserved albums of those who become famous later are of interest to the layman—a sort of curiosity about what a famous and revered leader looked like when he was a baby. The real rarity is the family story so well produced that it thrills not only the scion of that family but all others by its common bonds of humanity. The book under review is one such. This Regimental History is not merely for those of the 7th Gurkha, where needless to say it will be handed out to all new subalterns, but for all those who may care to read about soldiers and soldiering, in war and peace. Those who belong to the fighting services, and especially those who have had any association with the army of undivided India will have a special interest, be they associated with the Gurkhas or not. This reviewer for one, has not had the privilege to command Gurkha troops, but, without any disloyalty to his own Regiment, would like to say that undoubtedly this is the best Regimental History he has come by.

The tone is set from the very beginning. In the Foreword, Field Marshal the Viscount Slim, late Colonel of 7th Gurkha Rifles, claims the privilege to say: "Remember, tradition does not mean that you never do anything new but that you never fall below the standard of courage and conduct handed down to you. Then, tradition, far from being handcuffs to cramp your action, will be a handrail to guide and steady you in rough places."

The vicissitudes of the birth of the Regiment are cogently explained, and it should interest the present Gurkhas to learn that the Regiment which afterwards became 7th Gurkha Rifles was formed on 16 May 1902 at Thayetmyo in Burma based on a nucleus of 10th Gurkha Rifles, the Burma Military Police and men from other Gurkha Regiments in India. It was raised to take the place of the 8th Madras Native Infantry, and although, justifiably, it is on the Gurkha source of the Regiment that stress is laid, but its Madras inheritance deserves to be remembered.

The Regiment took part in both the World Wars, and it is difficult to choose any particular incident to quote. Reading this history is to feel the very atmosphere of battles, and give flesh and blood to many a battle honour carried proudly to this day by so many units of the then Indian Army—Megiddo, Kut Al Amara, Ctesiphon, Mesopotamia, of World War I, and Tobruk, Cassino, Siltange, Imphal, Mektilla to name some of World War II. It is not only the narration of events in which troops of 7th Gurkhas took part, but the conditions under which they did so. No amount of military history reading will explain what affected the fighting in Mesopotamia more succinctly than—"Here the shade temperature was actually lower, but the steaming moisture of the marshes made it overwhelmingly oppressive. Added to this discomfort were the attacks of clouds of vicious mosquitoes. It is little wonder that large numbers of men in every unit of the force succumbed to heat exhaustion and malaria. The Battalion (2nd) which in Arabistan had

mustered over eight hundred was reduced to three hundred and sixty nine, not all of them fully effective men—and we were not the hardest hit.”

It is difficult to resist further quotations, but as far as the descriptions of the various battles are concerned, let it be said that they are placed in their correct perspective, and are models of crisp and interesting reportage. Let the student of military history, whether for examinations or for interest, go over these pages for profit as well as pleasure. What is even more outstanding are the anecdotes of war and peace, which are the very life blood of regimental soldiering. After a month's long march in Baluchistan, “Western Command with no consideration for what we had been through ordered the Battalion to march to Quetta, a shabby parsimony that provoked the Commanding Officer to wire the North Western Railway for a special train—for which the Army eventually paid.”

“But adventure was not confined to the frontier. Batley, one of the few officers to join the Regiment in the lean post-war years, found himself the hero of a dramatic and mystifying incident in Bombay. Returning from golf late one evening he and a Sapper friend were driving round Malabar Hill when they came upon a car from which a man was trying to drag a screaming girl. Stopping their taxi they charged in with mashie and niblick, whereupon the kidnapper drew a pistol and shot Batley's companion through the thigh. Before he could fire another shot Batley was upon him: he was overpowered and handed over to the police. What the intrigue was we never learnt—there were rumours of a favourite dancing-girl—but some time later a gold cigarette case was sent to Batley—and doubtless to his friend—by a grateful Rajah.”

“A 1st Battalion man, Ajamlal, also had a special adventure of his own. Returning to Darjeeling from furlough, he was set upon and mauled by a leopard which mangled his left hand. Asked how he had escaped he replied that he had killed the leopard with his Kukri. Pressed to say how, with only one hand, he had been able to draw his Kukri he explained that he had not drawn it, it was sheathed when he struck the first blow. The force of the stroke caused the scabbard to fall apart and then, he said, the rest was easy! In spite of his terrible wound Ajamlal had skinned the leopard and taken the skin to the Tehsildar who paid him the usual reward of five rupees.”

The maps are clear and add greatly to the understanding of the text. The photos are outstanding and include some historical ones, including one of the two tanks destroyed by Rfn Ganju Lama, MM, for which he was awarded the V.C. It is, therefore, all the greater pity that photographs on two pages facing page 184 should have been printed upside down. The Appendix on Badges, Bands and Belongings is most apt. As the author says, “The story of the Regiment which has just been told was necessarily a story of its formation, its training, its sometimes humdrum life in peace and its service in two major wars and in less known campaigns. But the life of a regiment is made up of more than this. It has its own very personal possessions and habits: its Badge; its Band and Pipes, and the Days it commemorates. There are its Trophies, its Silver, its War Memorials; and other, almost private, things important only to itself.”

All in all, a most worthwhile book to read especially by young officers, or for that matter any soldier who cares to remember the Gurkha proverb:

“It is better to die than be a coward.”

A.M.S.

The Battle of Plassey by Michael Edwardes (B.T. Batesford, London, 1963) 167p.
Price 25sh.

Before any battle is termed 'decisive', it should be able to satisfy certain standards. Militarily, it must be a battle between two large forces and the tactics employed by both sides should indicate a real test of strength, wits and leadership between the opposing commanders. Use or violation of certain principles of war is no indication of the decisive nature of the battle, as, it is the successful commander who makes the fewest number of mistakes and is often favoured with the element of chance. Politically, the battle must be responsible for, and must lead to, the emergence of new forces, a change of dynasty, the form of government or the predominance of certain influences from then onwards. With this yardstick, most of the battles fought by the English in India could hardly be called decisive in the military sense though politically they paid them many a dividend. Plassey, no doubt, laid the pattern.

Colonel Clive had under him, in all, about 3,000 men and ten guns. Shiraj-ud-Daulah, on the other side, is reported to have had under his banner 50,000 men and horses including some elephants and guns but the majority of the senior generals and their contingents were traitors and party to a conspiracy and did not participate in the fighting. Even the 5,000 to 6,000 men under Mir Madan, the most trusted commander of Shiraj, who unfortunately died earlier during the day, had no faith in their *nawab*. The only organised force out of this rabble was a party of 40 to 50 Frenchmen who manned the guns. And it was against them that Clive had to fight a skirmish. Once these were dislodged from their positions by his overwhelming numbers, Clive had won a victory. There was no tactical deployment or display of generalship of any order. Clive spent some of the most anxious moments of his life on the day of the engagement. The remainder was all haphazard firing and assaults by the *nawab's* troops. When it started to rain, the English protected their ammunition—but on the other side there was no guiding mind or commander. The day was decided more by treason and conspiracy than by bullets. As is well-known, Mir Jafar was already in communication with Colonel Clive but did not participate in the battle and help him. Colonel Clive, therefore, staked his all and did not cater for any reverses. Once Shiraj had left the battle field under the pressure of the traitors, Clive won the victory. It is, therefore, hardly a battle in the military sense.

Politically it was, no doubt, the first step in Bengal from where the English went up higher and higher and won great dividends. Before Plassey Colonel Clive had already cleared the French stronghold at Chandernagar and established the supremacy of the East India Company once again in Calcutta and around. The body politic in India was already diseased. The Marathas, though they were still feared, were far away and deeply involved in north India. The Mughal Emperor was already the weakest link and the provincial governors ruled the destinies of their small areas and added to the prevailing rot by their indulgence in excessive pleasures regardless of any consequences. They were guided by their worthless courtiers or their concubines.

Since Plassey, the English influence and prestige increased but it was not until after the Battle of Buxar that they established themselves firmly in Bengal and Bihar as the rightful *dewans* of the Mughal empire. Ordinary traders now became merchant princes with regal pomp and show. Plassey, therefore, is complimentary to Buxar. When the English were threatened by the French in Madras, support and reinforcements were sent from Bengal which now became a strong base. It was with the two-pronged drive, one from the south and the other from the eastern

base that the English were able to clear all opposition and conquer the whole of India.

The actual battle has been covered by the author in just about four pages and he rightly calls Plassey a skirmish but a decisive one. With a combination of conspiracy and intrigue in which Clive was a past-master, he set the ball rolling towards the imperial journey. But no military genius was displayed by him at Plassey. The consequences of Plassey were, no doubt, enormous.

It is the events leading to the battle that were important. Actually operations were started a year earlier with the *nawab's* sack of Calcutta and the extinction of English influence in Bengal. The garrison in the 'white town' disappeared down the river in boats. The author has given a very lucid review of these events, backed by some of the original sources.

With this background information it has been possible to follow the Black Hole incident which forms a part of the campaign. Black Hole later became a part of Britain's imperial mythology and British writers have dubbed the Indians as inhuman and barbarous. The real facts were otherwise. The lock-up into which those rowdy and drunken prisoners were pushed in was a part of the barracks and officially named Black Hole by the English even before that date and was meant for the confinement of European defaulters. The name was officially used until 1868 for such lock-ups. As soon as the room was pointed out to the *nawab's* soldiers they were naturally pushed into it and locked up in the darkness. There was no other place for the purpose. It was the hottest night of the year and naturally many of them died within those twelve hours of confinement. The *nawab* was not held responsible for the ill-treatment of the prisoners and the consequent deaths due to suffocation even by those who suffered and were saved that night. The incident has not even been referred to either by Colonel Clive or Admiral Watson. There is no doubt, that it was not pre-planned and arranged with the knowledge of the *nawab*.

The author has placed emphasis on intrigues and conspiracy which according to him formed a part of the strategy of war of the English at that time. It was with the help of these weapons, reinforced by bribery and blackmail, that the English were able to win many a campaign later. Clive was the fore-runner of those who adopted this policy of winning wars, later followed by Wellesley and Lake and many others.

The book does not bring out any new material that is not known already. This is, however, a fine attempt by an English writer in studying an Indian campaign in an objective and dispassionate manner instead of painting the events as Macaulay and hundreds of other writers have done before him. The jacket is very attractive as are some of the illustrations in the book.

G.S.

INTERNATIONAL AFFAIRS

The Challenge of Coexistence by Milton Kovnar (Public Affairs Press, Washington, 1961) 130p. Price \$3.25

The title of the book is somewhat misleading. What is really discussed here is Soviet foreign economic policy. Written in 1960-61, the book demonstrates the pre-Kennedy suspicion in America of all Soviet moves and the psychological compulsion for American scholars to discern the devil in anything that the Soviet

Union did. The central theme of the book is that Soviet economic assistance was essentially meant to communise the under-developed world and with a number of quotations from Soviet scriptures, the author establishes that Soviet economic policy is nothing but a part of its foreign policy. The problem, however, is created by the fact that scriptures are not often described to understand the foreign policy of a Great Power, in a complex world. For one thing, the Soviet need to explain in ideological terms its pragmatic decisions has to be taken into account. For another, what is important in international affairs is not the declared motivations behind the action but the consequences of it.

In this book, there is a great deal of analysis of Soviet documents, Soviet theory and Soviet statements. An equal degree of analysis of what actually the Soviet Union has done is lacking. There are American scholars like W.W. Rostow who have determined this subject with much greater sophistication than the present author. In any case, by the time the book has come out, the problem of co-existence as well as the challenge of it look somewhat different than what the author makes it out to be. The central theme of the book that the Soviet Union determines its foreign economic policy as a part of its overall foreign policy, is, of course, valid—but which big power in the world today does it otherwise?

S.G.

"Project Plowshare": The Development of the Peaceful Uses of Nuclear Energy
by Ralph Sanders (Public Affairs Press, Washington, 1962). 206p.
Price \$. 4.50.

The book derives its name from a quotation by Isaiah which reads as follows: "They shall beat their swords into plowshares and their spears into pruning hooks; nation shall not lift up swords against nation; neither shall they learn war any more." With this as the spirit of the book, the author speculates on the peaceful uses of the uncontrolled nuclear energy, *i.e.*, of the nuclear explosions—Project Plowshare—seemingly a very unconvincing subject. Nuclear explosions provide man with energies of unparalleled magnitude and the book examines the possibility of making use of this in the large-scale control of physical environments of man, *e.g.*, in huge power (and isotope) production—Project Gnome in New Mexico making new harbours, blasting of mountains, Project Chariot in Alaska, extracting oil, Project Oilsands in Alberta, Canada, inequitable distribution of rain water and providing inland navigation waterways for transportation as in Russia and digging of canals and the associated development projects in Indus Valley in India and Pakistan. A matter-of-fact account of all these make a plausible reading. Project Plowshare is essentially connected with controlled experimentation and development of underground nuclear testing. The associated harmful effects make it imperative to concentrate on clean nuclear bombs with least amount of fallouts. Being a controversial subject by its very nature, it has both political and social implications in their national and international contexts. The author stresses, therefore the need to educate public opinion and an objective discussion of this nuclear dynamite. The "Test Ban Treaty," executed recently, does not apply to underground explosions. Let us hope this is a healthy development and in this lies an exciting promise for mankind.

V.R.

Africa, A Social Geography by Anthony Sillery (Duckworth, London, 1961)
244p. Price 35sh.

This book provides information for the general reader on history, geography, ethnology, culture and economy of the African continent with the main emphasis on factors other than history. The book is divided into three parts. The first

part gives a general description of the continent, its people, their languages and religion and their way of life. This is followed by a short, general account of the history of the continent till the end of 19th century. In the second part, which contains the main contents of the book, the author attempts a regional study of the continent. There is a short description of the history of the countries in each region, their economy, their people and the problems faced by them. The author has included a chapter on small islands but the islands of Reunion and Mauritius have been left out. In the third part the author makes an attempt to prophesy the future of the continent. He rightly believes that the process of social change, that began during the colonial rule in Africa, was likely to continue even after the emergence of independent States. The author, however, does not see much probability of unions, amalgamations and federations of territories and thus seems to underrate the strength of the idea of African unity that has considerably influenced developments in the continent.

The book is factual and readable and has a large number of interesting photographs. On the whole, it provides a good introduction to the continent and its people.

V. N. D.

I speak of Freedom by Kwame Nkrumah (William Heinemann, London 1961) 291p. Price 25sh.

This is a personal narrative. The author, who is the President of Ghana, has given his views and reactions regarding major developments in Ghana since December, 1947, when he returned to the country. For this purpose, the author has made use of press comments and excerpts from his speeches given at different occasions concerning various problems. The text of two speeches, one made at the conference to discuss Positive Action and Security in Africa in April, 1960, and the other, before the United Nations General Assembly in September, 1960, are given in full. The book also contains some answers to questions at two press conferences given by the author during his visit to India and the United States. The book is well-produced and there are a number of illustrations showing the author in company of leaders of different countries. There is, however, one noticeable misprint on page 203 where Mr. Macmillan is referred to as having coined the famous phrase, "the wind of change", in January, 1950, instead of 1960.

The book reveals the author's passionate desire for African unity and his ardent interest in the economic development of Ghana. As Ghana's policies are mainly a reflection of the views of its President, the book provides a useful commentary regarding the development of Ghana's domestic and foreign policies.

V. N. D.

The Algerian Problem by Edward Behr (Penguin Books, London, 1961) 251p. Price 3sh. 6d.

This is a fairly objective account of the Algerian problem by a staff correspondent of the *Time* Magazine. The author finds marked similarities between the revengeful pattern of violence during the Algerian revolt that began in 1954 and the violence that accompanied the French conquest of Algeria in the nineteenth century. Now, as then, the conventions of war were ignored by both the sides, resulting in savage torture and cruelties. The author, pointing out the presence of more than a million non-Muslims in Algeria as being at the heart of the Algerian problem, traces the history of European settlers in Algeria and brings out the reasons for the pattern of their behaviour. While tracing the history of the Algerian National Movement the author gives an account of the political career of Ferhat Abbas, who at one time

even questioned whether there was an Algerian nationhood but was gradually driven to realise the futility of an assimilationist policy and, by 1943, had become Algeria's most important nationalist. The hope of realisation of a progressive evolution towards self-government was dashed by the Setif Revolt which occurred in 1945. The nationalist movement that consequently underwent a change paved the way for the outbreak of the Algerian revolt of 1954.

The greater part of the book deals with the period after 1954. The author gives a detailed account of the policies pursued by the various governments of France during this period, discusses events leading to the fall of the Fourth Republic, the role of the army during the whole conflict and how General de Gaulle finally overcame resistance from a section of the armed forces in execution of his policies regarding Algeria. Discussing the economic problems of Algeria and how these could be solved if Algeria became independent, the author points out that the Saharan oil could not be really exploited without French participation and it is only in cooperation with France that Algeria could get enough revenue to carry out a degree of industrialisation. The author is, however, conscious of problems that may arise after Algeria becomes independent and feels that "the gulf between the idealized image of exiled revolutionaries and reality will suddenly become apparent, and this too may be a source of discord among Algerians." The words seem prophetic, seeing that most of the leaders of the revolutionary period have lost their position of power and influence.

V. N. D.

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in the

U. S. I. JOURNAL

(ESTD. 1870)

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CORRESPONDENCE

Correspondence is invited on subjects which have been dealt in the Journal, or which are of general interest to the Services.

To

The Editor of the U.S.I. Journal, New Delhi.

Sir,

1.

DEFENCE PRODUCTION

There are two portions of the current (July-September 1963) issue of the Journal which I feel require some comment. These portions are, firstly, the statement in the Editorial regarding the value of Defence Production in the year 1962-63 and secondly the article by Brigadier Grant on Material Development and Logistics.

From time to time we are told, both in the Press and in official documents, the value of goods produced for Defence purposes. But never, at least not at the level at which such information would be of extreme value, have we been told (not even in official classified correspondence) what these goods are and in what quantity have they been produced? In the absence of such information one would be inclined to believe that an unduly large amount of the cost has been debited to non-productive heads such as departmental charges, transfer charges, transportation charges and the like. If this is so, then the value of Defence Production is a meaningless entity and, what is more, gives a false picture of the performance of the Departments who are responsible for producing the equipment badly needed by the Defence Forces.

Brigadier Grant's case for a Material Development and Logistics Branch in the Army is convincing but there are several pre-requisites, all along the functional chain, which must, I feel, be there if this, or any other organisation is to succeed.

In 1950, there was almost a complete unawareness of the requirements of the Army in the matter of equipment. This was evidenced by an incident which has remained indelibly imprinted in my memory. To an Army discussion on "Defence" was invited a senior officer of the Production Ministry who, when his turn came to speak, told in fluent language the number of pins, drawing pins, sewing machines, etc., the country had produced in the year. At the end of his long, and somewhat boring, speech he invited questions and, quite naturally, one questioner wanted to know what the country had produced by way of Defence Equipment. The officer of the Production Ministry was at first somewhat non-plussed, (perhaps he hadn't been made aware of the fact that he was participating in a discussion on an operation of war) but, then, regaining his confidence, he replied that neither he nor the Ministry of Production were aware the Army wanted

anything. Now that this had been brought to his notice all he could say for the present was that in his opinion, a factory which produced a steam roller could eventually produce a tank! From this stage and through various other stages grew a monumental organisation, abounding in Controllers General and Directors General—and to what effect? The pitiful insufficiency of the Army in October, 1962, is too well-known to require any further comment.

Brigadier Grants tells us that the organisation proposed by him is modelled on the American Army's concept of the Materials Command. But, to begin the modelling half-way down the scale is a half-measure and this brings me to the first of my pre-requisites. Let us have an Army Minister with complete and unfettered control on all aspects affecting the Army; control more especially of that portion of the Defence Budget which is the Army's share. This control should include freedom to deal with foreign firms in the currency of that country, without reference to any higher authority. Should the Finance Ministry still feel the necessity to keep a finger in the pie, they could lay down a ceiling for the foreign exchange commitment and keep a watch to see this limit is not exceeded.

The second pre-requisite is that the Chief of the Material Development and Logistics Branch should have a complete freedom of action and a complete control over those portions of the Army Budget which have been set aside for research, development and provisioning. Here also this control should include freedom to convert our currency to foreign exchange, within the limits laid down by the Army Minister. The "Chief" must be free to conduct the activities of his Branch irrespective of the pulls of the politico-industrial giants. Further, his activities, and those of his Directors must not be subject to any form of control or monitoring by the DG R & D. (One of the foreseeable results of the proposed MDLB is that the DG R & D in the Ministry of Defence would be without a job. On the other hand he might be absorbed in the new Branch, possibly in the rank of Lieutenant-General!)

The next pre-requisite is that the Army, when they feel the necessity of a particular equipment, must be precise in what they want and, having laid down the qualitative requirement, they must abide by it. Under the guise of long-term planning, indecision is likely to creep in, and it has done in the past, and, while bigger and better ideas are being propounded, the first and original idea (and need) is threatened with death almost at birth. Equally important is that statisticians, both on the Army side and on the production side, must agree. Several years ago an incident occurred when the Army figures showed a deficiency of a particular item, while the figures of the Production authorities, obtained through an independent source, showed a surplus of that item. On that occasion a very senior officer of the Army was compelled to comment, "You see what a hell of a state the Army is in." As events proved, this was a prophetic statement.

The last pre-requisite concerns the final link in the chain of Production—industry; one of the functions of the proposed Branch is to deal with the industry in the development and production stages. What does this mean under the present

day conditions when there is practically no industry in the country which is assigned defence production tasks? (I should clarify that what I understand by "industry" is private industry. HAL and the like are veritable Government Departments and can hardly qualify to be termed as industry). It should be common ground that in a democratic set up, the needs of the Defence Forces cannot be met by Government Agencies alone. Give the private industry a chance to develop into manufacturers like Krupps of Essen, Vickers of Weybridge, the shipyards of Tyneside and Clydeside and aircraft manufacturers of the status of Hawker-Siddley of Britain, Messerschmidt of Germany and Douglas, Lockheed and Boeing of U.S.A. I would venture an opinion that had private industry received the encouragement it required, projects such as the production of the indigenous AVRO-748 could have been completed in a fraction of the time taken by the Air Force Workshop. (I hasten to add that this is in no way derogatory to the Air Force whose charter should never include the manufacture of planes.)

One of the aims of the proposed Branch is to ensure that the equipment in the hands of the fighting forces is being continually modernised, which term, presumably, includes modification of equipment to cater for local or widespread conditions. Here, the emphasis should be not only on the continuous process, but also on the speed with which modifications can be affected and defects, rectified. Two outstanding examples of this speed, which occurred during the last war, come to mind and which should be a target for the proposed Branch to equal. There was, firstly, the de-sensitising of hulls of ocean-going ships to the attractions of the magnetic mine. The second example is the "speed" with which a new model tank, the Sherman, was evolved to overcome the defects noticed in the Grant after large numbers of the latter were already in use by the Army. Both these developments played a significant part in the ultimate victory of the Allies.

The efficiency of the proposed Branch, as the efficiency of any organisation, can be measured only in terms of its positive contribution to the attainment of the common aim, in this case, the production of the equipment for the fighting forces, and in the quantity they require it. The proposed Branch has the potentialities to deliver the goods, but in my opinion, without the pre-requisites described above, this Branch has as little chance of succeeding as did the Controllers and Directors General in the past. As it stands, the proposal lays itself open to the obvious accusation of empire-building. All the good the proposed Branch would do is to create an upper structure, top-heavy with 'brass', and provide excellent career prospects for the technicians of the Army, who, in my opinion, already have preferential terms and conditions of service. This, surely, is not the main aim of the Material Development and Logistics Branch proposed by Brigadier Grant!

HQ 112 INF. BDE.,
c/o 56 A.P.O.
18th February, 1964.

Brigadier R.S.S. KOHLI

2.

MILITARY WRITERS AND SECURITY

I am writing this in connection with my article, "*Administrative Layout of Commands*" which was returned by you with the remarks that it had not been allowed to be published. I had revised this article and re-submitted it to you. It met the same fate. The decision seems, most probably, to have been based on security grounds—although no specific reason for not allowing it to be published was given.

In this article I had suggested the following:

- (a) Re-organisation of our commands. This involved increase in the number of commands we then had and a few changes in the static lower formations. The same increase has to some extent been adopted recently by creating a new central command and some additional lower static formations.
- (b) Shortening the chain of command by reducing certain intermediate static formation headquarters. This would, also, have increased the efficiency of our army. Clausewitz writes that "an order loses in rapidity, force and exactness if the gradation ladder down which it has to descend is long....."¹
- (c) Reduction of the unnecessary staff appointments so as to enable us to have more officers for regimental service.

From the above I cannot see in what way this article would have jeopardised our country's security! This article dealt with only the peace-time re-organisation and nothing else. On the other hand the creation of Central Command, recently, before its coming into existence was discussed in the daily papers. Herewith, I quote what the *Times of India* (Delhi) dated 18 March 63 had published under "Current Topics":

"New Command"

The reported decision to create an additional Army command by bifurcating the present Eastern Command is sound. Eastern Command at present has its headquarters at Lucknow and extends from Uttar Pradesh to Assam, a vast area that takes in part of the middle Sector of the Sino-Indian border, Bhutan, Sikkim, NEFA and Nagaland and the entire Nepal, Burma and East Pakistan borders. This is obviously unwieldy and even during the recent NEFA operations it was found necessary to establish a tactical command headquarters in Gauhati.

"The formation of a new Central Command would follow wartime practice. Central Command then consisted of U.P. and Madhya Pradesh and had its headquarters in Agra. It was principally concerned with training. Its successor would, however, be an operation command looking after the U.P. Tibet and Indo-Nepalese borders and Orissa and with its headquarters in Lucknow. This would leave Eastern Command with the vital Bengal, Assam, Bhutan, Sikkim, Nagaland area.

¹ Clausewitz *On War*, Vol. II, p. 26.

"The war-time headquarters of Eastern Command was Ranchi but it appears that Calcutta might be selected now. It would perhaps be far more desirable to locate the command headquarters and the headquarters of the Eastern Air Command outside the highly congested Calcutta area."

Later, the raising of six new divisions was also published in the daily papers in big headlines. The latter, I feel, is more of a security risk and should have been taken care of. But, no. One might come to this conclusion that we do not understand what security is! Some one has rightly said that "There are three types of secrecy: I, The Ostrich; II, The Red Box; III, The Real Thing.

"I—The Ostrich buries his head in the sand of the desert when pursued by his enemy, and because he can't see the enemy concludes the enemy can't see him. Such is the secrecy of the secretive and detestable habit which hides from our own officers what is known to the world in other navies.

"II—The secrecy of the Red Box is that of a distinguished Admiral who, with great pomp, used to have his red despatch box carried before him (like the umbrella of an African King), as containing the most secret plans; but one day, the box being unfortunately capsized and burst open, the only contents that fell out were copies of "*La Vie Parisienne*"! Such, it is feared, was the secrecy of those wonderful detailed plans for war we hear of in the past as having been secreted in secret drawers, to be brought out when the time comes, and when no one has any time to study them, supposing, that is, they ever existed; and, remember, it is detailed attention to *minutiae* and the consideration of trifles which spells success.

"III—There is the legitimate secrecy and secretiveness of hiding from your dearest friend the moment and the nature of your rush at the enemy, and which of all the variety of operations you have previously practised with the fleet you will bring into play! But all your captains will instantly know your mind and intentions, for you will hoist the signal or spark the wireless message, Plan A, or Plan Z!"²

I would implore that unnecessary security hurdles should not be placed in the way of military writers. They should be allowed free scope to express their opinions and put forward new ideas, if any. I agree with Major P.B. Deb that "Military thinkers and writers should get concrete assistance in our army."³ And only then can we make advances in the making of our services modern.

8 SIKH,
C/o 56 A.P.O.
21st October, 1963.

Major GULCHARAN SINGH

² *Surprise*, Erfurth, p. 43, Note I.

³ *USI Journal*, April-June 1963, p. 203

SECRETARY'S NOTES

THE NEW PRESS

The Journal has been beset with printing difficulties for a long time and, despite all effort on our part, several issues of the Journal have been out very much after the scheduled dates. With this issue, we have endeavoured to catch up with the dateline by changing the press. As you would have, no doubt, noticed already one of the good results of the change has been an improvement in the standard of printing. We hope that with the coming issue, our new printers would be able to bring out the Journal in time.

ARTICLES FOR THE JOURNAL

I must remind you that the quality of the material published in the Journal is very largely the result of combined effort of our readers. We would like to receive many more original articles from you than we have been receiving so far. No matter what field of military science and art it is that you would like to share your thoughts on with fellow-members and subscribers, please let us have your writings. Articles for publication in the Journal must be neatly typed in double-space on one side of the paper, and submitted in duplicate to the Editor, USI Journal, Kashmir House, New Delhi-11.

SUGGESTIONS FOR THE JOURNAL

The Journal is in its ninety-fourth year of publication. As you will, no doubt, appreciate, the Institution spends a great deal of its funds on producing this publication. We would like to have your comments, criticism and suggestions so that we may improve the Journal to meet your requirements.

LETTERS TO THE EDITOR

We wish to develop this feature in the Journal, so if there is any point in its contents on which you feel you would like to send me a letter for publication, do please send it along. It might be a letter of commendation on an article, or you might disagree with the conclusion of a writer. Whatever it is, send in your letters and I will endeavour to get them in. Letters should be as brief as possible and should be sent to the Editor USI Journal.

CORRESPONDENCE COURSE

The Institution has now embarked on correspondence course for staff college examinations to help members in operational areas. Those of our members who are aspiring to become graduates of staff college will, I trust, make use of this service and derive benefit from it. This course is now being organised as a regular feature of the services offered by the Institution to members.

LIBRARY

An extensive library is available for members of the Institution at Kashmir House in New Delhi. More and more funds are being diverted to the purchase of books on all subjects of interest, covering various aspects of the military science and art and international relations. The new additions for every quarter are announced in the Journal. While local members can visit the library on working days between 1000 and 1700 hours to read or borrow books and periodicals, the members stationed outside New Delhi may receive books on application. Books are sent post-free by registered parcel post to outstation members, who can borrow them for upto two months at a time unless the book is recalled and has to be returned immediately. As many as three volumes may be issued to a member at any one time. Reference books and works marked "Confidential" are not removed from the Library, where they are always available for consultation by members.

ANNUAL SUBSCRIPTION

I would like to thank all those members who paid their subscription so promptly at the beginning of the year.

To those of you who have not yet paid, may I remind you that your subscription was due on the 1st January. Would you please, therefore, put a cheque in the post to me TODAY? There are some members who have also to pay their subscription for 1963. They are requested to make the payment for both the years to avoid unnecessary reminders.

ADDRESS

The difficulties of tracing addresses are now very much increased. Members are earnestly requested to keep the Secretary informed of changes in their address or if possible give a permanent address which will always find them, e.g., a Bank.

NEW MEMBERS

From 1st January to 31st March 1964 the following members joined the Institution:

AHLAWAT, Major P.S., the Punjab Regiment.
 AHLUWALIA, Wing Commander J.S., I.A.F.
 BALDEV SINGH, Captain.
 BAWA, Major N.L., Signals.
 BEHL, Major P.A. (RETD).
 BHAGWANT SINGH, Major, Engineers.
 BHALLA, Major G.D.S., Artillery.
 BHANDARI, Major, B.P., Engineers.
 BHARGAVA, Captain P.S., A.S.C.
 BHARGAVA, Captain S.P., A.O.C.
 BHATIA, Captain B.K., Signals.
 BHOWMICK, Wing Commander N.B., I.A.F.
 BINDRA, Captain A.S., Artillery.

BISEN, Captain P.K.S., Signals.
 CHARANJIT SINGH, Major, E.M.E.
 CHATURVEDI, Major U.C., Artillery.
 CHAUHAN, Captain P.S., The Kumaon Regiment (Life).
 CHEEMA, Captain D.S., Signals.
 CHETTUR, Major S.
 DHODI, Major G.S., Artillery.
 DUGGAL, Captain S.S., A.D. Corps.
 GAIWAD, Major S.R.B., Artillery.
 GREWAL, Major G.S., Engineers.
 GOPALKRISHNAN, Major M., E.M.E.
 GULERI, Major S.C.S., The Punjab Regiment.

GURCHARAN SINGH, Major, The Punjab Regiment.
 GURDIP SINGH, Major, The Grenadiers.
 HARBANS LAL, Major, E.M.E.
 HARBANT SINGH, Lieut.-Colonel, A.S.C.
 HARDEV SINGH, Major, The Rajput Regiment.
 HARINDER SINGH, Sub-Lieut. Indian Navy.
 HARWANT SINGH BAWA, Captain,
 HERR, Captain J.S., Artillery.
 HUKKU, Lieut.-Commander I.B., Indian Navy.
 INDU PRAKASH, Major, Signals.
 JAGGI, Major D.S., 3 Gorkha, Rifles.
 JAIN, Major S.K.
 JASWANT SINGH, Major, The Rajputana Rifles.
 JOGINDER SINGH, Captain, Signals.
 KAMRAN, Major T.C.
 KANWAL SINGH, Major, The Grenadiers.
 KAPOOR, Captain O.P. Signals.
 KARALEY, Captain N.B., A.S.C.
 KARNIK, Group Captain V.R., I.A.F.
 KAUL, Captain G.L., The Maratha L.I.
 KHANNA, Lieut.-Colonel A.N., Artillery (RETD).
 KHULLAR, Captain S.D., Artillery.
 KHURANA, Captain D.N., Signals.
 KHURANA, Captain K.S., 8 Gorkha Rifles.
 KHURANA, Captain S.C.
 KHURANA, Major Y.P., Engineers.
 KOVOOR, Major N., Signals.
 KUL BHUSHAN, Major, E.M.E.
 KULBIR SINGH, Captain.
 KULHALLI, Captain A.B., A.O.C.
 KUMAR, Major M.L. Artillery.
 LIKHI, Captain M.P.
 MALIK, Captain S.C., Engineers.
 MALKANI, Major B.H., Engineers.
 MARWAHA, Captain R.K.
 MEHRA, Captain S.C.
 MEHTA, Captain B.N., 20 Lancers.
 MEHTA Captain S.P., Engineers.
 MITRA, Major N.D., Engineers.
 MOHINDRA, Captain S.
 MULLICK, Major B., Engineers.
 NAIR, Major M.N.K., E.M.E.
 NAIR, Captain V.K., Artillery.
 NARAYAN, Captain N.H.
 PRATAP SINGH, 2/Lieut. Signals.
 PATHAK, Major H.C., The Sikh Light Infantry.
 PATAL, 2/Lieut. K.S., The Maratha L.I.
 PIPLANI, Major J.D., A.S.C.
 POPLI, Captain M.L. Signals.
 PRAN NATH, Captain, Signals.
 PREM PRAKASH, Major, The Rajput Regiment.
 PRITAM DUTTA, Commander, Indian Navy.
 PURI, Captain V.K., Signals.
 RAGHBIR SINGH, Major, A.O.C.
 RAI, Lieut. B.S., J. & K. Militia.
 RAJ, Captain D.M. A.O.C.
 RAJENDRA KUMAR, Captain.
 RAM CHAND, Major S.
 RANA, Major S.S., Engineers.
 RAO, Captain G.M., Engineers.
 RATHAUR, Captain K.S., A.S.C.
 ROHTAGI, Major U.N., Artillery.
 SAHI, Lieut.-Colonel M.L.
 SAHRAWAT, Major S.S., The Dogra Regiment.
 SARAN, Captain RAJESHWAR, Signals.
 SATYAJIT, Shri. (Ex Flt. Lieut. I.A.F.)
 SETH, Captain S.N., Artillery.
 SETHI, Captain H.S.
 SHARMA, Major C.D., E.M.E.
 SHARMA, Captain N.K., A.S.C.
 SHERLEKAR, Captain P.D.
 SIMHA, Captain S.A., Signals.
 SINGH, Captain C.B., A.M.C.
 SINGH, Lieut.-Colonel G.B., Engineers
 SINGH, Captain L.P.
 SINGH, Captain N.B., Signals.
 SISODIA, Major A.S., The Sikh L.I.
 SODHI, Major H.S., Engineers.
 SOOD, 2/Lieut. K.K., 9 Gorkha Rifles.
 SUDHERA, Major R.C., Engineers.
 SURI, Captain K.C.
 SWARUP, Captain H.R., Signals.
 TANKHA, Major P.K., Artillery.
 TAXALI, Major S.C.
 TRIPATHI, Shri C.D., I.A.S.
 TRIPATHI, Major H.N., Engineers.
 VERMA, Major K.K., E.M.E.
 WARAICH, Captain G.P.S., A.E.C.
 WIRK, Major G.S., 7 Cavalry.

Ten officers' messes and institutions were enrolled as subscribing members during this period.

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Short History of Espionage	Colonel Allison Ind.	(1963)
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FIRST WORLD WAR

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SECOND WORLD WAR

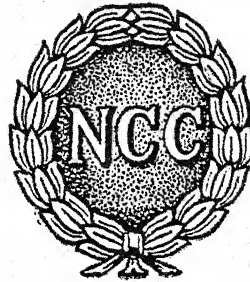
Anzio : The Gamble that failed	Martin Blumenson	(1963)
Hitler's Pre-War Policy and Military Plans	E.M. Robertson	(1963)
Monte Cassino : Historic Battle	Charles Connell	(1963)
*Official History of the Indian Armed Forces in the Second World War 1939-45 : Indian War Economy (Supply, Industry and Finance).	N.C. Sinha and P.N. Khera	(1962)
Ordeal in the Sun	George Cooper and others	(1963)
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NAVY

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Strike to Defend	Sqn.-Leader Nigel Walker	(1963)
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